


Faculty Advisory Group to UC IT Guidance Committee

**Research Cyber infrastructure Discussion
May 19, 2006**

ITGC Web site:

<http://www.universityofcalifornia.edu/itgc/welcome.html>

Comments:

<http://www.universityofcalifornia.edu/itgc/itgccomments.html>

[Mailto: itgc@ucop.edu](mailto:itgc@ucop.edu)



October 2005 UC Research Cyber infrastructure Meeting

Recommendations:

□ Planning

- 10 + year vision for UC CI
- Business case for investment
- Create UC Research Computing Group



October 2005 UC Research Cyber infrastructure Meeting

Recommendations:

□ Funding

- NSF proposal for CI prototypes
- Benchmark UC CI with competitors
- Strategies for stable funding streams
- Seed funding strategy for new initiatives



October 2005 UC Research Cyber infrastructure Meeting

Recommendations:

- Next Generation Network
 - 10 GB
 - Switched fiber network / Lambdas to labs/desktops
 - Sensor net data collection demonstration project



October 2005 UC Research Cyber infrastructure Meeting

Recommendations:

□ Data Stewardship

- Networked approach to exploit and preserve data
- Facilitate academic use of distributed, federated data repositories
- Influence national policy and funding re: digital stewardship



October 2005 UC Research Cyber infrastructure Meeting

Recommendations:

- High Performance Computing
 - Improve utilization of existing facilities and local support
 - Create a UC Grid



IT Guidance Committee Charge

- Identify **strategic directions for IT investments** that enable campuses to meet their distinctive needs more effectively while supporting the University's broader mission, academic programs and strategic goals.
- Promote the deployment of information technology services to **support innovation** and the enhancement of academic quality and institutional competitiveness.
- **Leverage IT investment and expertise** to fully exploit collective and campus-specific IT capabilities.



IT Guidance Committee Members

- David Ashley, EVC, Merced
- Jim Davis, CIO, UCLA
- Daniel Greenstein, AVP & University Librarian
- Kristine Hafner, AVP, Information Resources & Communications, UCOP
- Francisco Hernandez, Vice Chancellor, Student Affairs, UCSC
- Rory Hume, Acting Provost, UCOP
- David Kaplan, Professor, Philosophy, UCLA
- Larry Merkley, CIO, UCSC
- Gerry Munoff, University Librarian, Irvine
- Steve Relyea VC Business Affairs, UCSD
- John Oakley, Professor, UC Davis Law School, Vice Chair Academic Senate
- Jim Sandoval, Vice Chancellor Student Affairs, UCR
- AnnaLee Saxenian, Dean, SIMS, UCB
- Jonathan Showstack Academic Information Technology, UCSF
- Eric Vermillion, Associate Vice Chancellor, Finance, UCSF
- Michael Witherell, VC Research, UCSB
- Peter Yellowlees, Professor of Psychiatry, Vice Provost for Information and Educational Technology, UCD



ITGC Planning Assumptions



- UC and campuses will:
 - expand its global presence,
 - facilitate academic growth in interdisciplinary areas,
 - foster campus diversity,
 - leverage campus / lab research strengths to gain leadership position

- Research, instruction and scholarly communication will:
 - increasingly depend upon an integrated IT infrastructure, where scholarly information is readily accessible and easily exchanged,
 - require that a broad range of materials are made available to multiple stakeholders in classrooms and other learning environments

- UC will invest in information technology as essential shared “infrastructure” which
 - supports the University’s academic mission in a planned and coordinated fashion, and
 - minimizes redundant IT expenditures via new organizational and funding models to sustain, govern, and manage coordinated IT services



ITGC Working Groups

- Instructional technology
- Research cyber infrastructure
 - High performance computing
 - Advanced networking services
- Digital stewardship (academic / administrative)
- System wide infrastructure / enterprise systems
- IT in student life
- Others as required...

IT Guidance Committee Working Group Charge



- Appropriate consultation strategy
- Current state assessment
- Identification of strategic directions for new services / capabilities / delivery models
- Gap analysis
- Priorities
- Challenges
- Funding strategies and other critical success factors

Plus: Think Tanks (Flash mobs) as needed to address specific ideas in one or two meetings.



Broad Participation / Input

- Other perspectives
 - Faculty advisory groups
 - Campus visits
 - UC constituencies (e.g. medical centers)
 - Students
 - Corporate partners?

- Data collection
 - Targeted research and environmental scans
 - Faculty survey
 - Student input



ITGC Deliverables

- Working group reports / white papers
- IT strategic directions document
 - Cross cutting issues
 - High priorities linked to UC mission
 - New delivery models
 - Funding strategies
- Presentation to President, COC, Regents



Working Groups

- Instructional technology
- **Research cyber infrastructure**
 - High performance computing
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Working Group Status: **Advanced** **Networking Services**

□ *Purpose :*

- Develop the recommended architecture for the next generation UC network infrastructure
- Identify segment users and service model (including network management capability)
- Position UC for competitive advantage on a global basis
- Estimate costs of network upgrades options
- Identify and recommend rational UC funding models

□ *Working Group Chair:* Jack McCredie

□ *Consultant(s):* David Walker



Working Group Status: **Advanced Networking Services**

□ Consultation to include:

- University-wide Communications Planning Group (CPG)
- Research Computing Group (RCG)
- Faculty Cyber infrastructure Advisory group
- ITTP (Academic Senate IT Committee)
- Campus research computing groups
- CENIC

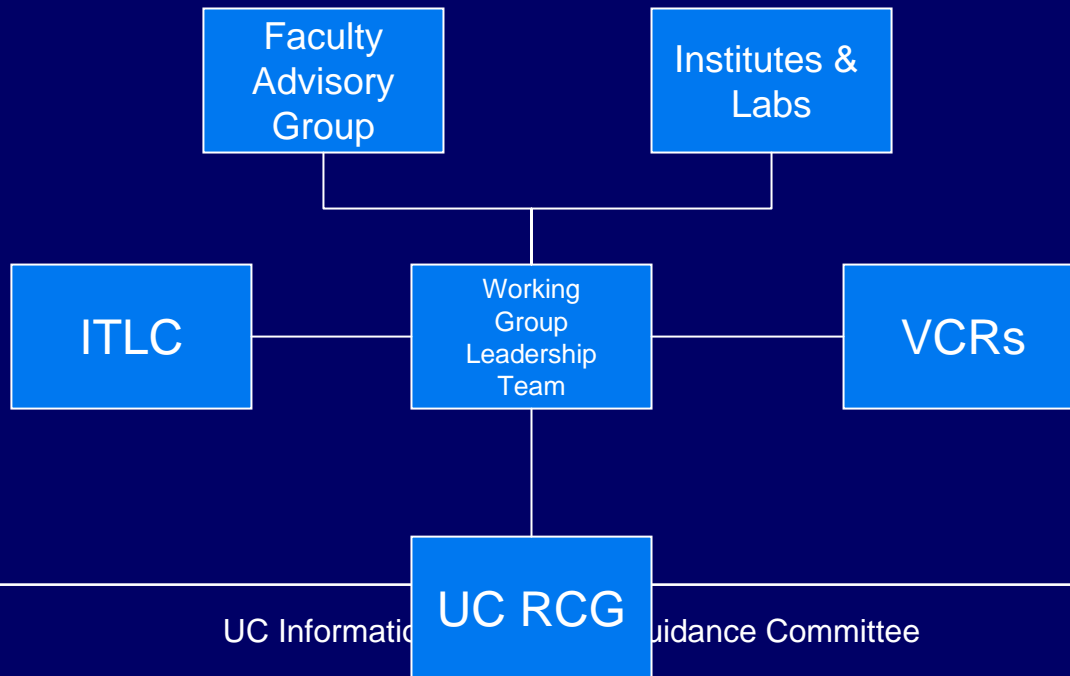


Working Group Status: High performance computing (research)

- **Purpose** : Leverage UC investment in high performance computing, data, and visualization (HPC) resources:
 - 1) define and instill the value of new faculty ‘social’ models for conducting IT enabled research involving HPC resources
 - 2) develop new fiscal models that allow for institutional and system HPC service layers
 - 3) position HPC infrastructure for local, institutional and system grant fulfillment
 - 4) position UC campuses for research infrastructure grants & leverage grants within the UC system
 - 5) provide state of the art high performance computing services to the broadest possible user base throughout UC
 - 6) manage the increasing costs and overhead associated with HPC resources

Working Group Status: High performance computing (research)

- **Working Group Leadership Team:** Jim Davis (UCLA), Chuck Rowley (UCR); VCR, Research Computing Group representative; Faculty Advisors; David Walker, UCOP
- **Consultation strategy:**





IT Guidance Committee Brainstorming Exercise (4/14/06)

ITGC Brainstorm

UC opportunities to enhance innovation
and leverage resources via strategic
investment in information technology



Advanced Networking Services:

ITGC Brainstorm

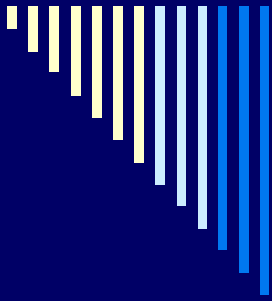
- ❑ Next generation intra- and inter-campus network capabilities
- ❑ Network bandwidth and reliability requirements for faculty research
- ❑ Technologies to balance security and access



Common IT Systems and Infrastructure:

ITGC Brainstorm

- ❑ Data center consolidation for reduced cost and greater economies of scale
- ❑ Next generation research administrative system capabilities
- ❑ Disaster recovery and business continuity investments



High Performance Research Computing:

ITGC Brainstorm

- Shared, managed clusters
- Development of new research computing facilities to address space, power and cooling challenges
- Develop a UC grid



Scholarly Collaboration

ITGC Brainstorm

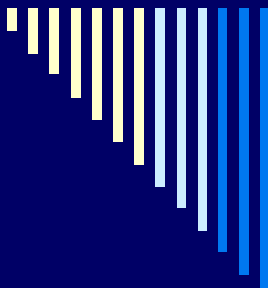
- ❑ IT in support of academic collaboration, “converged” technologies for voice, email and other personal productivity services
- ❑ Shared information, research, publications
- ❑ Integration of application and information delivery via user-facing portal and content management technologies
- ❑ UC open content gateway for sharing of Intellectual property



Stewardship of Digital Assets

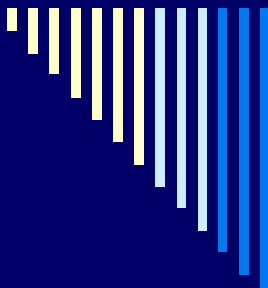
ITGC Brainstorm

- ❑ Tools, technologies and processes to capture, manage and effectively use the “tsunami of research data”
- ❑ Repurposing of information in teaching, research, administration
- ❑ “Inverting IP”: moving to a position of greater openness and sharing of intellectual property and content
- ❑ Addressing the legal, policy, and regulatory constraints affecting the creation of, access to and use of information for academic purposes



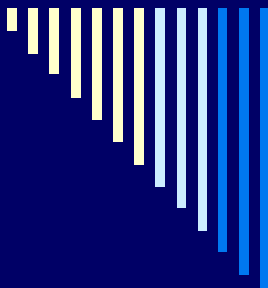
Issues Raised at the IT Leadership Council Meeting (5/9-10/06)

- Desire for local autonomy Vs need for collective action/investment to leverage resource and increase efficiency
- What is the UC “system”: value proposition for IT? What are basic core services that the system needs to ensure? What are campus differentiators that need to be preserved?
- Are we one or ten universities? Volunteer contributions can’t carry the agenda. Schizophrenic situation now of pressure to act as a single institution and no \$ or structure to do it.



Issues Raised at the IT Leadership Council Meeting (5/9-10/06)

- ❑ Need clear statement of whether UC should or should not collaborate. Campuses need to move forward and cannot be held back by system wide indecision.
- ❑ Innovation IT Vs utility IT: Draw the line and drive standards and efficiency in utilities areas
- ❑ Need to explore new models: Campus developed solutions – shared with others; collaborative development / community source model/structure for development among UC campuses (like Sakai)



Issues Raised at the IT Leadership Council Meeting (5/9-10/06)

- Agility – be able to respond quickly to avoid 10 solutions to every problem; need to deliver to constituencies under time pressure
- Articulate the cost of being unique; cost of current service models and the benefits of consolidation of commodity services
- Commodity service marketplace for IT – with costs and metrics
- Campus leadership needs to sponsor system wide initiatives for it to work



CallT2 Workshop: Enabling e-Science Applications over Advanced Networks

- Sept 8-10 - UCSD
- UCOP, CENIC, NLR, Cisco will co-sponsor this workshop to train end-users and networking planners on how to build “on-ramps” to the NLR from their labs.
- Interested end-users and campus network planners send email to: **Larry Smarr** lsmarr@soe.ucsd.edu