Data
An Institutional Asset & A Risk

JIM DAVIS VICE PROVOST – IT & CHIEF ACADEMIC TECHNOLOGY OFFICER

UCLA
“UCLA is in the data and knowledge business. Data is a currency that has to be managed, available and accessible as an institutional and strategic resource that underpins our business and academic mission... data is a strategic asset that can build and enhance the reputation of the university in terms of the impact of intellectual content, the ability for new discovery or better decisions, and the relationship each individual has with the university.”

— UCLA IT 2020 Strategic Plan
Security and Privacy

http://www.csmonitor.com/Photo-Galleries/CSM-Galleries/Clay-Bennett-Pulitzer-Prize-Cartoons#231700
This diagram is based on the 2013 report arising out of the University of California President’s privacy and information security initiative (ucop.edu/privacy-initiative).
Technology change – Protection of personally identifiable information and maintenance of robust cyber security are colliding with the ubiquitous sharing of information through social media and increasingly open, collaborative and visible online learning. Does everyone in your institution, including students, faculty and administrators, understand their rights and responsibilities in using e-mail, course software, and other data stored on the school network or cloud? Is ownership of intellectual property clear? Are clear institutional protocols regarding use, storage, and sharing of data in place?
UC’s Shared Patient Research Data Access
Research & Healthcare Sustainability

The Business Model of Data

Practice Valuation
Collective vs. Proprietary

Data Valuation
Collective vs. Proprietary

The Business of Open Architecture Market, Valuation of Data & Innovation

Collective Wisdom

Converting Knowledge to Wisdom

Converting Information to Knowledge

Converting Data to Information

Big Data

Smart Data, Analytics, Research & Meaningful Use

Data & Device Integration & Orchestration

Secure Data Highways

Secure Infrastructure

Collective Innovation & Practice

Smart Enterprise Health Delivery

Smart

IoT
NANTHealth Cloud Structure and Acquisitions

THE PERSONALIZED AND EVIDENCE BASED MEDICINE OF THE 21st CENTURY

Global Health Grid - SuperComputer - Data Center

Medical Data Highway - Cloud Computing - Compliance

Medical Devices Integration

iCOS Intelligent Clinical Operating System

Population Health

Genomic - Proteomic 3D, 4D Quantum Imaging

Decision Support

Collective Wisdom Within Reach

Converting Knowledge to Wisdom

Converting Information to Knowledge

Converting Data to Information

DATA

INFORMATION

KNOWLEDGE

WISDOM

Eviti (2011) – cancer treatment options; clinical trials

Five3 Genomics (2011) – genomic processing; personalized care


Boston Life Labs (2012) – Wireless devices; connects home health care; medical devices

National Lambda Rail (2012) – 12,000 mile high-speed advanced optical network; AT&T & Verizon

Alcatel-Lucent (2013) – Complementary discovery interactive media, monetization platform

Server Farm Realty (2012) – Data centers with advanced computing
Data Collection about Course Tools

### j. Course Tools Usage

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UC ILTI Cross Enrollment Courses

CCE Communications Hub Conceptual System Design
for Online Courses (UCDC, Summer Sessions, etc. to be considered later)

Notes
1. Real-time web services will be provided. A batch file implementation can be provided for campuses not equipped to handle web services.
2. Eligibility is assured by home campus.
3. Articulation data will be obtained from ASSIST.
What is Unizin?

The Unizin Consortium is universities coming together in a strategic way to exert greater control and influence over the digital learning landscape. It enables each institution, its faculty, and students to draw on an evolving set of tools to support digital learning for residential, flipped classroom, online courses/degrees, badged experiences for Alumni, or even MOOCs if desired. Unizin supports the differing missions and strategies of universities. Read “Why Unizin” in the blog.
UCLA’s Faculty Information System

Opus
Internal Data Sources

- UC PATH / CMS (Admin)
- Registrar (Courses Taught)
- External Affairs (Honors/ Awards)
- Graduate Division (Advising)
- Office of Instructional Development (Student Evaluations)
- Office of Research Administration (Grants)
- Academic Personnel / Administration Systems
- VITAE (CTS)
- NIH Grant/ Reporter
- Areas of Expertise
- List of Publications
- List of Grants
- Life Sciences Dossier
- Full Name
- Title(s)
- Primary Department
- Campus Address
- Salary
- Course Number
- Course Title
- Term
- Total Enrollment
- Title of Award
- Date
- Awarding Institution
- Areas of Expertise
- Student Name
- Role (e.g. Chair, Member)
- Date
- Degree Type
- Degree Granting Institution
- Areas of Expertise
- Position(s) Held
- Promotion/Merit Date(s)
- Documented Advancement Decision(s)
- Salary Level(s)
- UCLA Recruit
- DAT
- LEAD / FAST
- Historic Salary Data

https://www.apo.ucla.edu/initiatives/opus
OPUS Reconcile Data

Book of Record Process

Policy Work
- Data Elements from Data Summary
- Where is the Data?
- Who Maintains?
- Create Error Resolutions Process
- Create Data Stewardship Agreement

Technical Work
- Map data from Source Systems to Opus
- Get the Data
- Document Data Lifecycle
- Create Data Transparency
- Embed Contextual Metadata in Opus
- Identify the Data
- Integrate with Source Systems
- Understand the Data
OPUS How Are Data Used

Access & Usage of Faculty Data

Research
- Data Elements from Data Summary
  - What Data?
- What Policy?
  - Find applicable university and UIC policy
  - How are people currently using the data?
- What Risks
  - Public records requests
  - Reporting
- What uses?

Privacy

Solutions
- Visibility Control
  - Defaults
  - Options
  - Create process for dealing with new uses
- Access
  - Who can view
  - Who can edit
- Exceptions
  - Create retention policy for profile

Data Governance
Open access policies

• Australian Research Council
  - Code for the Responsible Conduct of Research
  - Data management plans
• National Science Foundation
  - Data sharing requirements
  - Data management plans
• U.S. Federal policy-2013
  - Open access to publications
  - Open access to data
• European Union
  - European Open Data Challenge
  - OpenAIRE
• Research Councils of the UK
  - Open access publishing
  - Provisions for access to data
Elsevier’s new generation of SciVal offers quick, easy access to the research performance of 4,600 research institutions and 220 countries worldwide.
Multi-dimensional Balancing

- Individual Value
- Institutional Value

- Data Value
- Individual
- Institutional

- Security
- Privacy

- Shared
- Proprietary

- Aggregation & Delivery
Projecting Ethics, Scholarship and Values with Data

• Proactively project’ values rather than defend them
  • Strong respect for our faculty, staff and students individually and as a community;
  • Strong culture and set of ethics, expectations and transparency that reflect the role of public institutions in higher education; and
  • Strong respect for its appropriate intellectual, scholarship and financial value.

• Our external partners and users extend our values

• Data Governance
  • Co-existence and appropriate balancing of security, privacy, openness, confidentiality, policy and management practices to reflect our values (‘appropriate use’).
Shaping the Opportunity & Risks

- Privacy and Data Protection Board
- UCLA Chief Privacy Officer
- Data Classification and Appropriate Tools – UCB, UCLA
- Opus Book of Record
- Senate/Administration Data Governance
- Education Analytics – Steering Committee for Online Learning
- Commercial value of data-driven - Medical IP – SOM
- Manufacturing – Reverse Infrastructure and Data Sharing
- UCLA Oversight Committee on Audit, IT Governance, Compliance and Controls
Data management is difficult

C. Borgman, UCLA
Era of Data

Joint physical action
Transient oral communication

Face-to-face
Culturally Mediated

Imagery
Symbol Mediated

Letters
Communication Mediated

1, 2, 3, ... Numbers
Network Mediated

Networked PCs
Web Publishing
Recommendation engines
Global search

Satellites
Broadcast media
Factories
Mass publishing

Sciencs
Mathematics
Texts
Economies
Art/graphics

Cloud Computing
"Intelligence of crowds"

Constant Contact
Sensor Networks
Cyberinfrastructure Mediated

Virtual observatories
Collaboratories
Social networking
Web 2.0

Our UC Policies

Borgman, C. L., Abelson, H., Dirks, L., Johnson, R., Koedinger, K. R., Linn, M. C., ...

Image: Jillian Wallis and Roy Pea