

**Berkeley** PUSHES THE BOUNDARIES OF KNOWLEDGE, CHALLENGES CONVENTION AND EXPANDS OPPORTUNITY TO CREATE THE LEADERS OF TOMORROW.

**ONE IT** A community of IT professionals who work together to provide the tools, data, and infrastructure the campus needs to continue to grow as the world's greatest public research university.

### Key Strategies from Berkeley's 10-Year Vision

Berkeley empowers engaged thinkers and global citizens to change our world.

Berkeley focuses on the good to address society's great challenges.

Berkeley embraces the California spirit: diverse, inclusive, entrepreneurial.

### One IT Goals to Support Campus Strategies

**G1** Provide all students the essential tools and data they need to be engaged thinkers and global citizens.

**G2** Develop the research technology infrastructure needed to address society's great challenges and to share knowledge for the public good.

**G3** Create a diverse and inclusive community of IT professionals who are trusted and strategic partners with the campus, alumni, and the public.

#### IT Priority Initiatives for FY 23:

- Instructional Resilience for In-Person and Hybrid Teaching Environments\*

#### IT Priority Initiatives for FY 23:

- Improve Services for Researchers Working with Data

#### IT Priority Initiatives for FY 23:

- Mature the IT Governance Model
- Website & Third Party Platform Remediation\*

### Berkeley's IT Foundation

**G4** Sustain the IT foundation for campus faculty, staff, students, and alumni. Improve campus IT systems and infrastructure through innovation, sustainable funding, campus governance, and organizational evolution. Support all One IT goals and campus strategies above.

#### IT Priority Initiatives for FY 23:

- Data Center and Cloud Services Roadmap Implementation
- Data Integration Supporting UC Berkeley Advancement
- IS-3 Implementation Project\*
- Network User Experience Improvements
- One IT Strategic Plan for FY24+

#### Major Campus Systems Enhancements:

- Comprehensive Curriculum Management System
- EPIC Implementation\*
- Gender Recognition/Lived Name Implementation
- Work-Study Management System

\*Multiple IT units contributing to this goal.



# One IT Strategic Goal 1

Provide all students the essential tools and data they need to be engaged thinkers and global citizens.

## Instructional Resilience for In-Person and Hybrid Teaching Environments\*

In coordination with the Research, Teaching, and Learning (RTL) Executive Advisory Group and campus stakeholders (Berkeley Law, Engineering, Haas, and iSchool), develop a design-based plan to identify the next iteration of instructional resilience for remote, in-class, and hybrid instruction. **Lead: Research, Teaching, and Learning**

### Key Measures of Success

- A standard definition for Instructional Resilience across Undergraduate Education, Law, Engineering, Haas, and iSchool.
- Document trends, commonalities, and gaps of instructional resilience across all units based on surveys, focus groups, and 1:1 discussions with users.
- Initiate one design-based project tackling a component of Instructional Resilience based on findings from previous measures of success.

## Berkeley Law: Educational Resilience

Support our Law school students, faculty, and leadership in all aspects of remote, hybrid, and in-person learning. Refine procedures for staying flexible in supporting teaching as guidelines around COVID mandates change and are removed. **Lead: Gabe Gonzales**

### Key Measures of Success

- We upgrade two classrooms to continue to increase hybrid and recording capacity.
- We will effectively deliver the classroom/educational/instructional adaptations decided by leadership.
- Collect positive or constructive feedback on difficulties from students and student-facing departments at the end of the year and feedback from our front-facing IT service teams about their work and experience.

## Engineering IT: Instructional Services

Increase support for instructional services for large-scale courses, including DataHub, Computer-based Testing, and bCourses. **Lead: Finsen Chiu**

### Key Measures of Success

- Implement a multi-node AWS cloud infrastructure for the Computer-based Testing pilot program for scalability and instructional resilience.
- Increase the instructional adoption of DataHub through strategic partnerships with CDSS and RTL.
- Increase the adoption of bCourses functionality by identifying opportunities for instructional integration.

# Haas IT: Refresh Academic Planning Tools

Working alongside RTL to streamline and align Haas' in-house curricular planning tools with the best practices of the Instructional Resilience collaboration priority. **Leads: Sreekala Nair and Dennis Sheridan**

## Key Measures of Success

- Academic Planning and Instruction team can meet business requirements to provide two-year projections on curricular planning per the new Unit 18 agreement.
- Increased accessibility to information because of the enhanced budget estimate process.
- Improve the user experience for the curricular planning and lecturer appointment processes.

# School of Information IT: Instructional Resilience

Deliver tools and services allowing instructors and students to pivot quickly between remote, hybrid, and in-person modalities as circumstances dictate. This effort focuses on building out/refining Zoom Room capability in our classrooms/meeting spaces. **Leads: Kevin Heard and Gary Morphy-Lum**

## Key Measures of Success

- As circumstances dictate, instruction can quickly and easily switch between in-person, hybrid, and remote modalities.
- Faculty can host hybrid classes/meetings in our Zoom Rooms-enabled classrooms on a self-service basis.
- Remote students in hybrid sessions receive an equitable classroom experience (e.g., the audio quality is similar to what they would experience if attending an in-person or fully remote class).



## One IT Strategic Goal 2

Develop the research technology infrastructure Berkeley needs to address society's great challenges and to share knowledge for the public good.

# Improve Services for Researchers Working with Data

In collaboration with bIT (Storage & Backup, bConnected teams), develop a framework and methodology for working with researchers to understand and express their data storage needs. Together, these tools will provide a systematic way to characterize a research data use case and its requirements, allowing for "one conversation held multiple times" (rather than a series of disparate conversations) and moving forward with the campus storage strategy effort. Our goal is to establish a common lens through which we can understand storage characteristics and assess risk to research data, allowing both campus and investigators to place a value on that data. **Lead: Research, Teaching, and Learning**

## Key Measures of Success

- Identify a set of fundamental research data storage characteristics.
- Develop a mechanism for quantifying the importance of each storage characteristic to help researchers select among storage options.
- Align with and support the data storage options dashboard developed by the bConnected team.
- Develop a requirement gathering template that produces a systematic and sharable characterization of the risks and requirements for research data storage.
- Provide input into developing storage and backup services, both on campus and system-wide (e.g., UC Research Data Backup RFP).



# One IT Strategic Goal 3

Create a diverse and inclusive community of IT professionals who are trusted and strategic partners with the campus, alumni, and the public.

## Website & Third Party Platform Remediation

Working with campus stakeholders to further evolve the institution's posture in relation to accessibility of all digital tools, both existing and new tools, and content developed internally or acquired externally. **Lead: Berkeley IT - Campus IT Experience**

### Key Measures of Success

- Complete hiring for the project team.
- Finalize plan and timeline:
  - Increased awareness about remediation efforts and scope.
  - Top 200 sites identified, assessed, and owners notified.
  - Outreach and remediation completed for 30% of top sites.
  - Develop training materials and requirements for web developers, administrators, and content contributors.
  - Enroll all Berkeley sites into Siteimprove and notify owners.
  - Develop escalation process for the top 200 websites with the most traffic.

## Mature the IT Governance Model

Continue to mature and grow the new campus IT Governance model. Stand up additional committees as needed. Leverage the model to move high-impact IT projects through the campus review and funding approval processes. **Lead: Berkeley IT - Strategy and Partnerships**

### Key Measures of Success

- Hire a governance Program Manager.
- Standup the Data Governance Committee.
- Continue to develop and formalize IT governance processes and policies, including annual goal setting and self-assessment.
- Create a robust communications plan to better inform the campus community about how to engage with IT governance and learn about outcomes for topics that come to governance for review/recommendation.



# One IT Strategic Goal 4

Sustain the IT foundation for campus faculty, staff, students, and alumni.

## Cybersecurity Implementation\*

Continue to roll out the IS-3 Unit Project across campus, operationalize the onboarding process, initiate an annual review for pilot Units, and ongoing Unit Information Security Lead engagement. **Lead: Berkeley IT - Information Security Office**

### Key Measures of Success

- Onboarding is complete for all units designated as high-risk.
- Complete annual review for early adopters of IS-3 implementation.
- Onboarding process established for high and low-risk units.
- Ongoing annual review process developed.
- A program of regular communication with Unit Information Security Leads (UISLs) is in place.

## Berkeley Law: Security, Privacy, Compliance

Work through recommendations from IS-3 review and complete departmental Information Security Management Program reviews. **Lead: Gabe Gonzalez**

### Key Measures of Success

- Updated Socreg records and documentation for all covered systems and services (including cloud services).
- Put a process in place for reviewing and updating systems annually and the intake of new services.
- Focus on doing fewer things better.

## Environment, Health, & Safety IT: Cybersecurity and IS-3 Compliance

Continue work to bring EH&S systems and applications into compliance with IS-3 standards, and begin to evaluate processes for vulnerabilities. **Lead: Guy Seltzer**

### Key Measures of Success

- Bring a second supplier of data center services online to supplement the Earl Warren Data Center (and possibly become one of its replacements).
- The number of co-located (“colo”) data tenants in Warren Hall has been reduced by 20%, with most moving to a new Berkeley IT (bIT) colo-providing location or cloud provider.
- Uptake of bIT’s private cloud expanded by 20%, and a comparable reduction in physical hardware in the data center.
- With the engagement of [Berkeley's Cloud Community of Practice](#), the Cloud Resource Center is re-launched as a robust online resource for people choosing among on-premise (“on-prem”) and cloud-based options.
- For consideration by leadership, complete our recommendations for a financial model for computing and storage infrastructure (cloud and on-prem).

# Goldman School of Public Policy: Cybersecurity and IS-3 Compliance

Continue work to bring all Goldman School of Public Policy (GSPP) systems and applications into compliance with IS-3 policies and standards and begin to evaluate processes and identify and mitigate vulnerabilities. **Lead: Darrian Hall**

## Key Measures of Success

- Reduce the volume of security vulnerability notifications.
- Place 50% of GSPP systems and applications into virtual environments (or alternative managed environments).
- Have a reliable data storage solution (since Box and Google Drive storage limits are constrained).

# Haas IT: Implementation of the IS-3 Security Policy

Departmental audits of cybersecurity practices to ensure compliance with the IS-3 policy. **Lead: Sreekala Nair**

## Key Measures of Success

- Fulfill obligations with campus to conduct an internal audit of business units for IS-3 compliance.
- Identify a solution to move to a P4-certified data storage option that also meets business needs.
- Increase staff awareness of data protection and improve processes aligned with IS-3 policies.

# I School IT: Information Security Program

Create an information security program allowing key stakeholders to identify/manage risk and keeping our practices aligned with applicable laws, regulations, and university policies. **Leads: Kevin Heard, Steve Didley, and Gary Morphy-Lum**

## Key Measures of Success

- Implement a program that allows us to regularly assess our compliance with applicable laws, regulations, and policies (including IS-3).
- Key stakeholders thoroughly understand the cyber risks we face and can factor these into their decisions.
- All members of our community understand their roles and responsibilities concerning cybersecurity.

# Letters & Sciences IT: IS-3 Compliance and Recommendation Implementation

Work through recommendations from the IS-3 review for LSCore. Provide consultative assistance to LS units outside of the LSCore organization regarding IS-3. **Lead: Edgar Ortega**

## Key Measures of Success

- Establish roles and responsibilities and view IT activities through the lens of IS-3 compliance.
- Reduce risk mitigation to the campus by IS-3 policies.
- Create and communicate our Information Security Management Program unit security plan.
- Establish yearly review periods.
- All mobile devices within LS Core are encrypted.

# Research Administration and Compliance: IS-3 Implementation

Improve departmental information security posture and reduce risk by implementing recommendations from the Information Security Office (ISO). Research Administration and Compliance (RAC) IT will work with RAC leadership, ISO, IT Client Services, and Berkeley IT service providers to implement IS-3 policies and standards. **Lead: Ken Geis**

## Key Measures of Success

- Implement the first three of the five recommendations in our IS-3 Unit Assessment. Increase the integrity of our infrastructure.
- Working with AVC-RAC, we send at least one message/announcement to critical stakeholders.

# University Development and Alumni Relations IT: IS-3 Implementation

Work with the Information Security Office to audit and document the University Development and Alumni Relations' (UDAR) IS-3 compliance. **Lead: Kalpa Barman**

## Key Measures of Success

- Assess Data Protection and Availability Levels for fundraising-related applications (CADS and others) with direction from the Security Office.
- With guidance from the Security Office, implement recommended procedures and processes for Protection Level P4 data security compliance.
- Review and evaluate department data policies with Associate Vice Chancellor, Director of Data Quality and Management (DQM), and other stakeholders.

# Network User Experience Improvement

Offer a broader and clearer range of connectivity options for campus users. Modernize and improve the stability, usability, capability, and capacity of various network services, including Wi-Fi Infrastructure, Wi-Fi Device Connectivity Services, Campus Firewall, Campus VPN, and Connectivity for International Students. **Lead: Berkeley IT - Campus IT Infrastructure**

## Key Measures of Success

- Improve the roaming performance of user-connected devices to allow for seamless connectivity while moving around on campus.
- Deliver a network specific for Internet of Things (IoT) devices. Including a device registry that maps to individual CalNet IDs and improves connection reliability/stability.
- Fully remove AirBears2 network to simplify user experience and replace all remaining CISCO wireless access points to improve connection reliability and stability.
- Roll out a new visitor network and retire CalVisitor to improve network security, connection reliability, and stability.

# Data Center and Cloud Services Roadmap Implementation

Develop concrete next steps for the evolution of on-premise server rooms across campus, including data center colocation and local/edge server rooms, and a detailed implementation plan for campus system utilization of the public cloud. **Lead: Berkeley IT - Strategy and Partnerships**

## Key Measures of Success

- Deliver V1 of the campus (proposed) computational infrastructure roadmap.
- Identify a surge option for Warren Hall and actively onboard high-power dense research computing to a new location in the first half of FY23.
- Establish target colocation facilities for future workloads.
- Develop an accepted financial and incentives model for covering campus off-site hosting costs.

# Data Integration Supporting UC Berkeley Advancement

Implement a comprehensive data integration platform that simplifies and expedites data interchanges from multiple auxiliary systems into the alumni/donor system of record (CADS). **Lead: University Development and Alumni Relations**

## Key Measures of Success

- Implementation of new interfaces in just a few weeks instead of months, with our limiting factor being vendor sophistication rather than UDAR capabilities.
- High impact data from across campus can be prioritized and stored in CADS - events, communications, volunteers, etc.
- Streamlined processes that allow UDAR to work through 10x as much imported data within a year.
- Precise data use guidelines and definitions for Berkeley Advancement as a foundation for a shared language and data culture.

# One IT Strategic Plan & Process Revision

In collaboration with One IT Leadership, reshape the IT strategic planning process to determine the direction of IT services and support for the Berkeley campus over the next three to five years. The plan will continue to focus on building an agile and resilient IT strategy while analyzing the best course of action to reach our collective priorities.

**Lead: Berkeley IT - Strategy and Partnerships**

## Key Measures of Success

- Engage the One IT community in reenvisioning a new campus strategic planning process and plan to align and coordinate common IT priorities and goals.
- Identify new programs and activities to foster collaboration across the One IT community.
- Develop outreach strategies to highlight bIT service offerings that could provide value to smaller campus IT departments.



## Major Campus Systems Enhancements:

Various service management systems and/or applications are being evaluated, migrated, or replaced over the next several years. For FY23, we wish to highlight these significant enterprise projects and the departments and staff that make them possible. The behind-the-scenes work impacts and shapes the IT experience for the Berkeley campus community.

These substantial operational projects each contribute to the Berkeley Campus Strategic Goals of **empowering engaged thinkers and global citizens to change our world** while simultaneously **addressing society's great challenges**. The One IT community comes together to **embrace the California spirit: diverse, inclusive, and entrepreneurial** by providing the foundational systems and support that drive the university's mission.

## Comprehensive Curriculum Management System

The current homegrown Comprehensive Curriculum Management System (CCMS) cannot meet the evolving needs of the university, which were exacerbated by the pandemic. Students, parents, and faculty are all impacted. The first effort will consist of developing a budget estimate and submitting it to IT Governance for approval. **Lead: Berkeley IT - Campus Applications and Data**

### Key Measures of Success

- Procurement of a transparent, integrated system to effectively manage the full suite of curriculum development processes for undergraduate and graduate curricula.
- Initial change management work/sign-off across campus partnerships.
- End-to-end business process review and fit/gap analysis.
- MVP implementation/integration.

## EPIC Implementation\*

Work with the UC-wide implementation team to implement Epic (as the primary EHR system for Berkeley) to replace PnC, Systoc, and EyeCare. This initiative will be a significant multi-year migration project impacting nearly every department and business unit at UHS and the Optometry Clinic. It will require a close partnership with a UC Medical Center. **Lead: University Health Services IT**

### Key Measures of Success

- Identify a UC Medical Center hosting partner (Aug 2022).
- Identify the one-time implementation and five-year operating costs and identify/secure the necessary funding (Sept 2022).
- Appoint an experienced Epic Implementation Lead, and create a project implementation plan "Playbook" (Oct 2022).
- Working closely with our Medical Center partner, kick off the Epic Implementation project to "go live" in Summer 2024 (earlier for Optometry).

# Gender Recognition/Lived Name Implementation

Engage with project leadership and Berkeley IT to organize and engage resources supporting campus efforts to implement new policies for gender recognition and lived names that affect nearly all campus applications and data services. **Lead: Berkeley IT - Campus Applications and Data**

## Key Measures of Success

- Effective project management, governance, and engagement structures are in place.
- Roadmap for technical implementation completion by 12/23.
- Document and manages campus data definitions, hierarchies, and flows.
- Portfolio of affected systems prioritized and managed.
- Working solutions in place in priority systems.

# Work-Study Management System

The existing 20+-year-old homegrown Work-Study Management System (WSMS) was built with a robust design to meet the complex needs of UC Berkeley and serves nearly 3,000 student employees with significant financial needs, 80 off- and on-campus employers, and 700 employer users; it is destined to be sunsetted due to the urgent need to upgrade the underlying technology and user interface. The UC Berkeley Work-Study program disburses nearly \$10M in aid to students (\$6M from UCB institutional funds and \$4M from the federal government). UC Berkeley must identify a sustainable solution to continue to meet the needs of students, employers, and staff. This is especially urgent with the expected growth of the work-study program through the Learning Aligned Employment Program (LAEP) and the investment in the Governor's budget that more than doubled this work-study program from \$200M to \$500M. Initial internal research suggests that Work-Study vendor options are lacking. With campus partner input, the SIS team also performed a high-level fit/gap analysis, revealing that leveraging delivered Campus Solutions functionality has substantial gaps requiring significant customizations to meet the current need. Therefore, prioritization and funding for a WSMS Replacement project are essential to do more research and provide a final assessment. **Lead: Berkeley IT - Campus Applications and Data**

## Key Measures of Success

- Identify and connect critical stakeholders.
- Create a project charter with a phased approach.
- Investigate vendor space and internal applications and capacity.
- Identify a path forward/minimally viable product.
- Begin implementation.

The following twenty-two campus IT units have shared their top department priorities and are helping to lead One IT work on campus. See their priorities beginning on page 8.

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|---|--|
| 1. Berkeley IT - Business Operations              | 12. Goldman School of Public Policy (GSPP)         |
| 2. Berkeley IT - Campus Applications and Data     | 13. Haas Technology Solutions                      |
| 3. Berkeley IT - Campus IT Experience             | 14. School of Information IT                       |
| 4. Berkeley IT - Campus IT Infrastructure         | 15. Letters and Science IT                         |
| 5. Berkeley IT - Information Security Office      | 16. Library IT                                     |
| 6. Berkeley IT - Strategies and Partnerships      | 17. Optometry IT                                   |
| 7. Berkeley Law IT                                | 18. School of Social Welfare IT                    |
| 8. Computing, Data Science, and Society (CDSS) IT | 19. Research, Administration, and Compliance IT    |
| 9. Engineering IT                                 | 20. Research, Teaching, and Learning               |
| 10. Environment, Health, and Safety IT            | 21. University Development and Alumni Relations IT |
| 11. Facilities Services IT                        | 22. University Health Services IT                  |