

ADVANCED TECHNOLOGY PROJECTS
SPONSORED BY THE VICE PROVOST-INFORMATION AND EDUCATIONAL TECHNOLOGY
AT-A-GLANCE SUMMARY (JAN. 2003)

This document provides an at-a-glance summary of the various advanced technology projects initiated by Dr. John Bruno, Vice Provost for Information and Educational Technology (IET) at UC Davis. Here you'll find 15 projects (including 2 implementation workgroups that resulted from advanced technology projects), a brief summary of their charges, the individuals involved, and the status of each project.

What are Advanced Technology Projects (ATP)?

ATP teams:

- Are small groups charged with investigating within a defined timeframe a major technological issue with possible campuswide applications.
- Typically include members of Information and Educational Technology (IET) as well as representatives from the Technology Infrastructure Forum (TIF) and campus departments or organizations.

ATP reports:

- The work of the ATP teams results in a report to Dr. Bruno summarizing the group's findings and recommendations for the possible implementation of the technology or issue they were charged to investigate.
- The reports are posted on the ATP site. Whenever applicable, an implementation workgroup is formed following the completion of an advanced technology project (as was the case, for example, with the Windows 2000 Active Directory and the Enterprise Directory projects).

More information:

- This document, along with reports, charge letters and other information, are available on the ATP site at <http://vpiet.ucdavis.edu/advancedprojects/>.
- Questions or comments about this document and the ATP site should be directed to *vpiet-info@ucdavis.edu*.

TECHNOLOGY INFRASTRUCTURE PROJECTS				
PROJECT	CHARGE	NBA*	MEMBERSHIP	STATUS
<p>ENTERPRISE DIRECTORY SERVICES IMPLEMENTATION WORKGROUP</p>	<ul style="list-style-type: none"> Design, implement, and deploy a campus person registry. Design, implement, and deploy a campus enterprise directory. <p>See the complete charge at http://vpjet.ucdavis.edu/advancedprojects/projects.html#ediw</p> <p><i>Note: This Implementation Workgroup was formed in part in response to the New Business Architecture Technology Development Team's recommendation to develop registry and enterprise directory services. This was identified as one of three top priority technology infrastructure projects to get the NBA underway (see the Technology Development Team's report at http://nba.ucdavis.edu).</i></p> <p><i>This implementation workgroup will draw on the report produced by the Enterprise Directory Services Advanced Technology Project Team. The report was submitted in March, 2001 and can be accessed on the Web at http://vpjet.ucdavis.edu/advancedprojects/enterprise_directory.pdf</i></p>	Yes	<ul style="list-style-type: none"> Randy Moory, IET Sandra Stewart, IET <p><i>Note: In addition to the two members listed above, a Core Project Team has been formed. It is comprised of IET and campus staff. They bring the needed expertise to develop and implement the enterprise directory services.</i></p>	<ul style="list-style-type: none"> This workgroup was formed in March, 2002. The EDS implementation team is now focusing on building the Person Registry. This Registry will enable campus systems to establish a unique system identification for a person. The team is developing an identity match program based upon the Banner processes, which will serve as an API that systems will use to communicate with the Person Registry. The initial implementation of the Person Registry will integrate Banner and PPS into the registry processes. A key issue for the project is management of ambiguous identities records that are not clearly a match or new identity records. The project team has purchased and set up hardware for our development environment. The team has created a Registry database and completed an initial load of Banner identities and is currently converting the first set of Banner load programs batch and on-line that will provide templates for future programming changes. This fiscal year, the project team expects to architect a solution for the Banner conversion that will pilot future conversions.
<p>PORTAL PERFORMANCE AND RELIABILITY</p>	<ul style="list-style-type: none"> Investigate and report on the performance and scalability of the MyUCDavis portal's physical architecture to ensure high performance. Review all components of the logical layer of the portal to determine if there are any performance issues stemming from file system or database access, data volume, ColdFusion, or JavaScript interpretation, etc. Investigate and report on server reliability. Investigate and report on server scalability. Investigate and report on the option to relocate the course management application, including 	Yes	<ul style="list-style-type: none"> Brian Alexander (chair), IET Joyce Johnstone, IET Ken Jones, Department of Computer Science Jeremy Smith, Language Learning Center Elizabeth St. Goar, IET 	<ul style="list-style-type: none"> This Advanced Technology Project has been completed. The team's report includes findings and recommendations. See the PDF on the Web at http://vpjet.ucdavis.edu/advancedprojects/Portal_Performance_ATP.Report.Final.pdf.

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	<p>MySpace, to a separate centrally supported server.</p> <ul style="list-style-type: none"> Investigate and report on the performance of the portal when accessed via various network configurations, including low-speed modems and wireless access. Investigate and report on design and interface alternatives for supporting portal application interactions. 			
<p>CONSOLIDATION OF CITRIX SERVERS (IMPLEMENTATION WORKGROUP)</p>	<ul style="list-style-type: none"> <i>Investigate the possibility of combining the current distributed Citrix servers together into one environment. Through this consolidation of services, the campus would be in a position to leverage resources, including fail over and the load-balancing possibilities of a larger server pool. These client/server applications could be “web-enabled” using the Citrix Web client solution, and they would benefit from centralized support through the Data Center.</i> 	Yes	<ul style="list-style-type: none"> Patrick Kelly, IET (Lead) Martha Cornejo, IET Emerson L. David, Facilities Paul Hirose, Engineering Dale Hurt, University Relations Eric Myrehn, IET Eric Rothgarn, RM&P Katie Stevens, Accounting and Financial Services Mike Timineri, IET Robert Whitaker, Facilities 	<ul style="list-style-type: none"> This implementation workgroup was formed in April. The team includes system administrators responsible for, or planning to implement, Citrix servers in their departments The team submitted a draft report summarizing their findings and recommendations which is now under review as the team finalizes cost estimates.
<p>WORKFLOW SYSTEM FOR THE MYUCDAVIS PORTAL</p>	<ul style="list-style-type: none"> Investigate and report on workflow infrastructure efforts, underway or planned at the Office of the President, through higher education initiatives, and at other campuses (e.g., Indiana University and UC Irvine). Investigate and report on workflow infrastructure products. Identify and report on university and industry best practices that can inform the possible deployment of a workflow infrastructure for campus enterprise portal applications. Assess and report on the technical requirements for the successful integration of a workflow infrastructure into the UC Davis enterprise portal environment. Provide an inventory of UC Davis business processes that could benefit from the existence of a workflow infrastructure. 	Yes	<ul style="list-style-type: none"> Patrick Kelly (chair), IET Karen Rendig, Student Affairs Patty Strauss, Office of Administration Richard Warg, IET Gary Yamamoto, University Relations 	<ul style="list-style-type: none"> This Advanced Technology Project has been completed. The team’s report includes findings and recommendations. See the PDF on the Web at http://vpjet.ucdavis.edu/advancedprojects/WorkflowATP_final.Report.pdf/.

<p>WINDOWS 2000 ACTIVE DIRECTORY IMPLEMENTATION WORKGROUP</p>	<ul style="list-style-type: none"> • Establish a realistic service implementation project plan, including proof of concept, development, testing requirements, through implementation and rollout for the provision of service, building on the work of the Windows 2000 Advanced Technology Project and the Windows 2000 Project Team Recommendations. • Provide implementation, installation, configuration, and fully functional thin root Active Directory service. • Establish users group, with representation from administrative and academic departments, to facilitate interactions with and support for campus clients and to provide IET with recommendation on the enterprise's best interests regarding policies, guidelines, security issues, on going hardware and software support. 		<ul style="list-style-type: none"> • Patrick Kelly, IET • Martha Cornejo, IET • Eric Myrehn, IET • Grace Xu, IET • Josh Van Horn, IET • Doreen Meyer, IET 	<ul style="list-style-type: none"> • The workgroup is developing an Active Directory implementation plan. A test forest has been set up and tools have been developed to populate the AD from the accounts management system (Mothra). The workgroup is finalizing Kerberos testing and working to resolve issues with password synchronization. Departmental domains will be added to the forest one at a time when the production version of the Active Directory forest is implemented. For more information see the Windows site at http://windows.ucdavis.edu/. • <i>Note: This is an Implementation Project. The Advanced Technology Project (ATP) which preceded this project was completed in summer 2000.</i>
<p>WIRELESS POLICY DEVELOPMENT</p>	<ul style="list-style-type: none"> • Develop a campus policy for deployment and management of wireless network technologies. The proposed policy will: <ul style="list-style-type: none"> • Serve as the starting point for UC Davis discussion over wireless network responsibilities, security, interference management and suitability. • Couple the desire for campus constituencies to deploy wireless technologies with a central administrative desire to assure that all constituents be assured of deploying such systems with an acceptable level of service quality and security. 		<ul style="list-style-type: none"> • Dave Klem, IET • Bradford Luten, Graduate School of Management • Randy Moory, IET • Zack O'Donnell, IET • Bob Ono, IET (Chair) 	<ul style="list-style-type: none"> • This ATP has been completed. <p><i>Note:</i> Over the last few months, the draft wireless network policy has been circulated among campus advisory and constituent groups. The policy covers a number of wireless technology issues, including wireless access points, security, how to mitigate interference between wireless devices and how to prioritize the resolution of these conflicts, and suitable uses for wireless communications and interoperability between buildings. In late September, the final draft was completed that incorporates the comments obtained through the review process.</p> <p>This policy was reviewed and approved in early October. It is now published in the campus policy manual (see http://manuals.ucdavis.edu/ppm/310/310-17.htm). The Vice Provost's Office and Communications Resources are developing an implementation plan for the new policy.</p>

SECURITY PROJECTS				
PROJECT	CHARGE	NBA*	MEMBERSHIP	STATUS
COMMON AUTHENTICATION	<ul style="list-style-type: none"> Identify long-term campus authentication requirements. Review existing authentication services in respect to strategic requirements. Identify alternative methods to address strategic authentication requirements. Review the advantages and disadvantages of alternative authentication systems, in respect to factors including, but not limited to, functionality, scalability, resiliency, security, and manageability. Provide long-range authentication service recommendations. 	Yes	<ul style="list-style-type: none"> Tom Arons, IET Bill Grabert, Accounting and Financial Services David Johnston, Office of the Registrar Matt Bishop, Computer Science Department Bob Ono, IET (Lead) Don Stitt, UC Davis Medical Center 	<ul style="list-style-type: none"> This ATP has been completed. The team's report was submitted in December, 2002 and can be accessed on the Web at http://vpiet.ucdavis.edu/advancedprojects/AATPFinal%20Report.pdf. The report recommends expansion of Distauth services and campus participation in the system-wide PKI project, as well as higher education efforts to develop web-based single sign-on systems. As part of the ATP, the team completed a review of three vendor authentication solutions. These solutions were submitted to the Authentication ATP as part of an RFI that was issued in July. The vendor solution presentations to the ATP were completed at the end of September.
ELECTRONIC CREDIT/DEBIT TRANSACTIONS	<ul style="list-style-type: none"> Identify UC credit/debit card vendor program security requirements for card-not-present transactions. Identify industry reasonable practices for secure processing of card-not-present transactions. Recommend UC Davis network/ application architecture and standards for secure processing of card-not-present transactions. Prepare a report including the team's findings and revisions to Credit and Debit Card Program, PPM 330-41. 	Yes	<ul style="list-style-type: none"> Tom Arons, IET Jeff Barrett, Office of Administration Tony Firpo, Internal Audit Services Eileen Gaffney, Accounting and Financial Services Peggy Hoos, Cashier's Office Bob Ono, IET (Lead) Sandra Stewart, IET 	<ul style="list-style-type: none"> This ATP has been completed. The team's report was submitted in June, 2001 and can be accessed on the Web at http://vpiet.ucdavis.edu/advancedprojects/OAA-Transmittal-c.pdf The report recommends that the Office of Administration incorporate the report's provisions into the Credit and Debit Card Program Policy (PPM 330-41). The recommendations are intended to augment the existing Web processing provisions of the draft Credit and Debit Card Program Policy (Section IV.4. Web Processing).
FIREWALL AND NETWORK SECURITY	<ul style="list-style-type: none"> Identify the role and functions of the components of enterprise network security architecture, including network firewalls. Review the application of network firewalls within departmental networks and within the broader campus VLAN architecture. Identify the factors that impact the deployment of firewalls Recommend policies for use, acquisition, support and maintenance of network firewalls. 	Yes	<ul style="list-style-type: none"> John Brittnacher, Epidemiology & Preventive Medicine Adam Getchell, Human Resources Kevin Mayeshiro, IET, Co-Chair Minh Nguyen, College of Letters and Science Bob Ono, IET, Co- 	<ul style="list-style-type: none"> This ATP has been completed. The team's report was published in August, 2001. See the team's findings and recommendations at http://vpiet.ucdavis.edu/advancedprojects/ATPFirewallDraftReport.pdf

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			<p>Chair</p> <ul style="list-style-type: none"> • Michael Timineri, IET 	
<p>INCIDENT RESPONSE</p>	<ul style="list-style-type: none"> • Produce a campuswide program structure for computer security incident response. • Develop the process and security standards for the investigation, control and prevention of unauthorized disruption of the availability, integrity, or confidentiality of campus computer systems, networks, and/or data. The resulting standards will also address security events where external computer system owners allege harm from campus computing systems and networks. The proposed incident response approach will reflect consideration for issues relating to federal and state laws, UC and UC Davis policy, employee and labor relations, risk management, internal audit, public communication, law enforcement, and student affairs. 		<ul style="list-style-type: none"> • Tom Arons, IET • Doreen Meyer, IET • Bob Ono, IET (Lead) 	<ul style="list-style-type: none"> • This ATP has been completed. • The project team published its framework for the establishment and operation of a campus Incident Response Team in August, 2001. See http://vpiet.ucdavis.edu/advancedprojects/IncRespFramework.pdf • Note: The proposal for the establishment and operation of a campus Incident Response Team was recently shared with TIF and AdC3. Upon review and integration of council and forum guidance to the incident response function, IET will be forwarding the proposal to the Provost's Office for further discussion and review. During this review, the formalization and implementation of the incident response team will be proposed.
<p>INTRUSION DETECTION AND RESPONSE</p>	<ul style="list-style-type: none"> • Identify the role and functions of computing and network intrusion detection and prevention within an enterprise security architecture. • Review alternatives for developing and implementing computing and network intrusion detection and prevention capability. • Identify the factors that impact the development, implementation, and support of computing and network intrusion detection and prevention measures. • Recommend campus policies for use, acquisition, support and maintenance of intrusion detection and prevention measures. 		<ul style="list-style-type: none"> • Tom Arons, IET • Travis Schick, IET • Robert Ono, IET, Chairperson • Gary Jellis, Network Services, UCDCM • Dax Prather, Division of Biological Sciences and Technology Infrastructure Forum Member 	<ul style="list-style-type: none"> • This ATP is completed. • The project team is circulating a draft report for review and comment. • The ATP team completed its work and published its report in September. See http://vpiet.ucdavis.edu/advancedprojects/IDS_ATP_Report.pdf • The team is now initiating development of intrusion detection policy and systems consistent with the ATP recommendations. Specifically, they will be developing an independent policy or an addendum to the campus Electronic Communications Policy that further defines the use and responsibilities relating to use of intrusion detection systems and developing both a network data collection system for traffic analysis and a host-based intrusion detection pilot project.
<p>MOBILE COMPUTING AUTHENTICATION</p>	<ul style="list-style-type: none"> • Develop a plan for Kerberos-based authentication for public access ports, including wireless access to the campus network. • Draw on the expertise of the campus technical community (including the Technology Infrastructure Forum members and the Campus Technical Lead Committee) and consult widely with other institutions, IET staff, and UC Davis 		<ul style="list-style-type: none"> • Tom Arons, IET • Rodger Hess, IET 	<ul style="list-style-type: none"> • This ATP is underway. • A solution for authenticating mobile computing devices to the wireless network has been developed and implemented. See http://wireless.ucdavis.edu.

campus constituents.			
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VIDEO TECHNOLOGY PROJECTS				
PROJECT	CHARGE	NBA*	MEMBERSHIP	STATUS
<p>VIDEO CONFERENCING OVER IP</p>	<ul style="list-style-type: none"> Investigate efforts, underway or planned, at other UC campuses, at the Office of the President, and through the Internet2 Initiative Identify university and industry best practices that can inform the possible deployment of videoconferencing over IP on our campus. Assess the software and hardware (centralized and desktop) requirements for provisioning this service. Assess any network infrastructure issues and requirements that would need to be addressed (e.g., scalability, reliability, quality of service, etc.). Identify the costs involved. 		<ul style="list-style-type: none"> Janette Dickens, IET-Information Resources Wayne Haley (Chair), IET-Communications Resources Jana Katz-Bell, UC Davis Medical Center Ravi Nemana, UC Davis Medical Center Raymond Tai, School of Veterinary Medicine Paul VerWey, IET-Mediaworks 	<ul style="list-style-type: none"> This ATP was formed on March 19, 2002. Team members have been investigating how other universities are implementing IP video conferencing, what issues they've encountered, and what lessons could be leveraged if the UC Davis campus decided to implement this technology. The team has also started investigating UC Davis uses of video conferencing, including at the VMTH, the Division of Education, and UCDMC. The team has started to evaluate various conferencing over IP software products.
<p>VIDEO SERVICES AND DISTRIBUTION</p>	<ul style="list-style-type: none"> Develop an inventory of the current state of the UC Davis video distribution infrastructure. Develop an inventory of the current video services available at UC Davis. Assess the future need for video services and the corresponding infrastructure requirements. Assess current and future technology trends in video services. 		<ul style="list-style-type: none"> Tom Aiello, IET Alex Antipa, IET Todd Chapman, IET Janette Dickens, IET Dave Klem, IET Paul VerWey, IET (Chair) 	<ul style="list-style-type: none"> This ATP has been completed. The team's draft report, including an inventory of video services and findings, is available on the Web. See http://vpict.ucdavis.edu/advancedprojects/Video.Services.ATP.Report.final.pdf/

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