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Texas A&M Information Technology
2012 Annual Highlights

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“This report showcases how Texas A&M Information Technology, with our partners at the university and the A&M System, help this great institution flourish.”

Message from Dr. Pierce Cantrell

Why is information technology important? IT is more than everyday services we depend on such as email or Internet. IT goes beyond the latest gadgets or apps. IT is about people - the faculty, staff and students who benefit from technology and our exceptional employees who provide and support essential IT services.

IT, in some form or another, touches everyone at Texas A&M University. IT empowers people, transforms research, reshapes teaching and learning, and revolutionizes business and communication. This report showcases how Texas A&M Information Technology, with our partners at the university and the A&M System, help this great institution flourish.

The report also highlights achievements of our highly skilled and dedicated employees, the foundation for this organization's success. I am proud that their commitment and teamwork in all facets of their jobs display our values of excellence, leadership and service.

As we look forward to the future, our highest priorities will focus on the university's goals to become a top public

university and a billion-dollar research institution. We are well-positioned with world-class IT that will help spur new discoveries and improve the standing of our academic programs.

I encourage you to share your questions or comments with me and our team as we continue to provide an outstanding IT environment for our university. Thank you for the opportunity to serve you.

Dr. Pierce Cantrell

*Vice President & Associate Provost for
Information Technology*

Oceans of Sequences Opened with High-Tech Research Tools

Advances in data-intensive research unleash the potential for greater discoveries, while providing opportunities for collaboration that accelerate scientific progress. The Texas A&M Supercomputing Facility assists oceanographer Lisa Campbell to mine large amounts of data, revealing hidden insights to answer research questions. The Supercomputing Facility supports the university with expertise and leading-edge hardware for large-scale scientific computation.

Gulf Mystery Analyzed

Dr. Campbell studies the Red Tide phenomenon along the Gulf of Mexico. The harmful algal bloom caused by the organism *Karenia brevis* can upset the ecological balance, disrupt seafood harvesting and pose health risks to humans and marine animals through potent neurotoxins called brevetoxins.

To understand how changes in gene expression may contribute to the Red Tide phenomenon, Dr. Campbell is studying the organism's transcriptome, a collection of all ribonucleic acid (RNA) transcripts present in the cell. By analyzing the transcriptome, researchers can determine when expression of genes increases or decreases to gain deeper knowledge of how cells function.

Supercomputer Speeds Research

Dr. Campbell accelerates her research with Texas A&M's Eos supercomputer, which is capable of 35.5 trillion computations per second. With the help of the National Center for Biotechnology Information's Basic Local Alignment Search Tool (BLAST) to match *Karenia brevis* sequences to the many millions of sequences archived in databases, over 88,000 potential genes have been identified.

Strong IT Boosts Research Funding

According to Dr. Campbell, Texas A&M's research computing resources are vitally important to compete for grants in genomics and bioinformatics. "Access to supercomputers and other critical research infrastructure have been decisive in obtaining funding for my research," said Dr. Campbell.

Research computing tools enable scientists like Dr. Campbell to contribute to biological databases and increase the world's scientific knowledge. Dr. Campbell collaborates on the Gordon and Betty Moore Foundation's Marine Microbiology Initiative, an international project to sequence transcriptomes of over 750 marine microbial species. The genetic data will be publicly available and help researchers further understand the role microbes play in the ecology of the oceans.

The Texas A&M Supercomputing Facility supports a diverse spectrum of research including weather modeling and forecasting, computational fluid dynamics, chemistry, physics, materials science, nanotechnology and geophysics, as well as bioinformatics.

To read more, visit u.tamu.edu/accomplishments and select "Research."

RAPID GENE ANALYSIS WITH
TEXAS A&M SUPERCOMPUTERS

35.5 trillion

computations per second



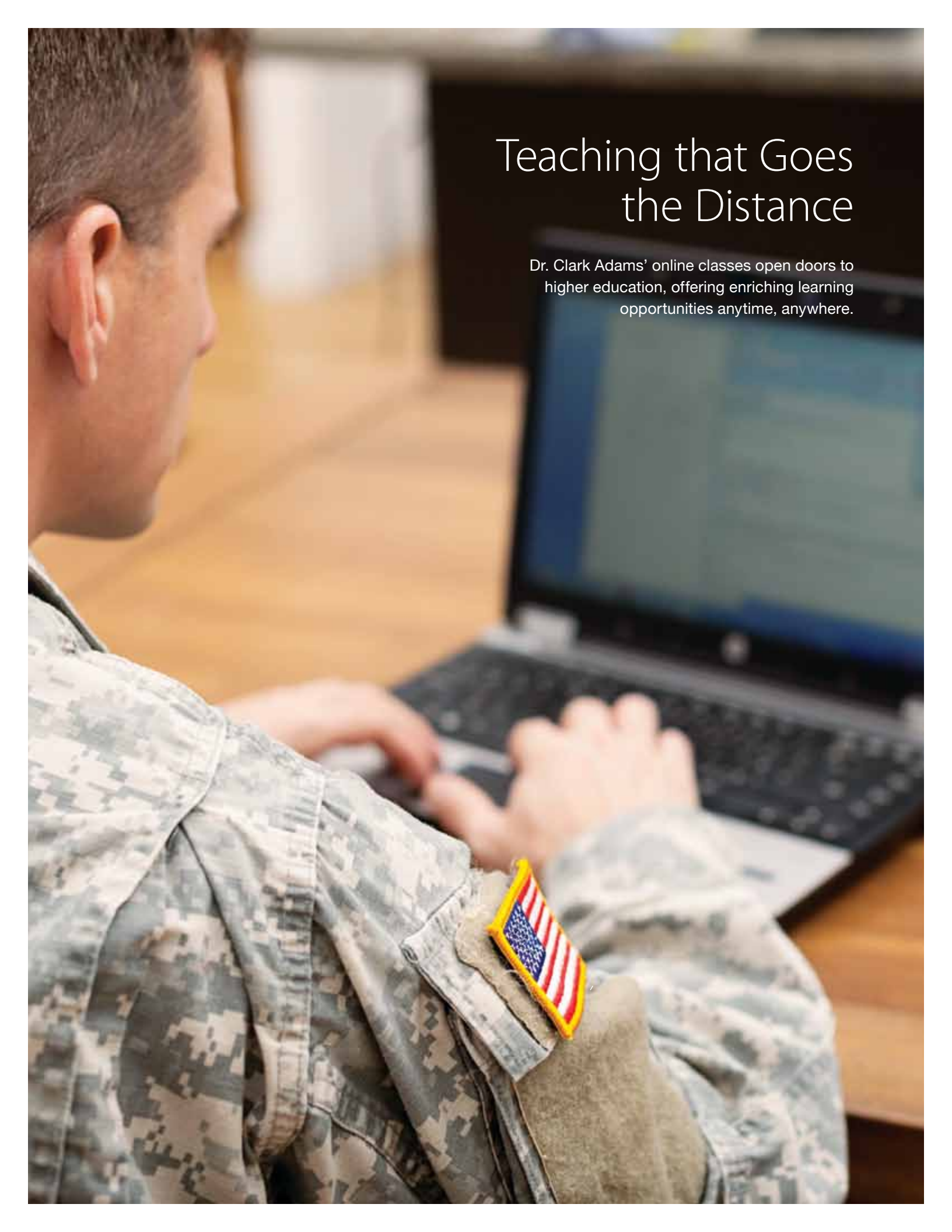
“ Access to supercomputers and other critical research infrastructure have been decisive in obtaining funding for my research.”

*Dr. Lisa Campbell
Department of Oceanography
Texas A&M University*

Research Taken to the Next Level

Texas A&M oceanographer Lisa Campbell uses supercomputers to mine gene expression data, accelerating her research of the Gulf of Mexico's Red Tide.





Teaching that Goes the Distance

Dr. Clark Adams' online classes open doors to higher education, offering enriching learning opportunities anytime, anywhere.



Connecting a Community of Lifelong Learners

Everything connects to everything else in Dr. Clark E. Adams' distance education courses. The Texas A&M University professor of Wildlife and Fisheries Sciences teaches about relationships and links between the natural environment and human society. He designs his classes around interrelated course components, providing options to aid individual learning styles of far-away students. And through Dr. Clark's online presence, Texas A&M reaches out and connects with a wider community. Students who cannot physically attend university classes because of job location, disability, family responsibilities or other factors are able to participate. Military personnel, including combat troops, can continue their education.

No Such Thing as a Free Lunch

Students in the online class perform work identical to an in-person class. The instructor and students communicate via eLearning, the university's learning management system operated by Instructional Technology Services. Except for the textbook, the entire course is online, including taped lectures produced by KAMU-TV. "You can give a sloppy lecture in person, but a lousy taped lecture lasts forever," said Dr. Adams. "KAMU has been outstanding in helping me record and put my lectures online. They provided equipment, people, camera time and expertise." In his courses, Dr. Adams challenges his students to be curious, confront complexity and translate knowledge into personal action. Throughout his 48-year career, Dr. Adams has strived to do the same.

"My involvement in distance education over the past 15 years has been one of the most rewarding, challenging and satisfying experiences in my teaching career," said Dr. Adams. "People are out there who want to take courses online. The equipment is here, and the expertise is available. There's a gold mine of opportunity for developing online courses at Texas A&M."

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Dr. Clark Adams
Department of Wildlife and Fisheries Sciences
Texas A&M University

To read more about how IT is elevating teaching and learning, visit u.tamu.edu/accomplishments and select "Teaching & Learning."

DISTANCE LEARNING'S GLOBAL REACH

Collaboration

"Dr. Adams, we do have pheasants in Central Park in New York City so they can also be categorized as urban wildlife."

Park Ranger, New York

Convenience

"I love the way the course allows me to work on each section as my schedule permits. I wait to watch the course lectures when it's time to nurse my baby."

New Mother, Texas

Adaptability

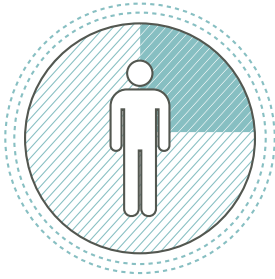
"I'll be working on an off-shore oil rig this semester. I won't have access to streaming video, can you send me the DVD discs for each taped lecture?"

Oil Rig Worker, Gulf of Mexico

Flexibility

"Hey Doc, I missed the last exam because we were under a mortar attack. Can you reschedule it for me?"

Soldier stationed in Afghanistan



“We no longer need to manage server hardware. As a result, we gained one-quarter of a full-time employee’s time.”

Virtualization Partners Deliver Strong Returns

The Bush School of Government and Public Service is transforming its IT operations through a partnership with Texas A&M Information Technology – with smarter resource use and a commitment to providing the best IT services. When it came time to replace aging computing infrastructure, the Bush School contracted with Texas A&M IT for a resource pool of centrally managed virtual servers in the university data centers. The Bush School benefited from Texas A&M IT’s virtualization expertise and server administrators available 24/7. “We no longer need to manage server hardware. As a result, we gained one-quarter of a full-time employee’s time,” said Ron Szabo, the Bush School’s director of information systems. “I couldn’t be more pleased with the results. The migration process was completely transparent and seamless to Bush School users.”

Leading Positive Change

Simply replacing old servers with the same class of machines appeared to cost less than the resource pool. However, the Bush School opted to move away from a small business model of cheaper, less robust hardware to meet the strategic goals of a premier institution. The university’s centralized virtualization service provides access to enterprise-level servers, which the college could not afford on its own, and much-needed operational flexibility. “We now have enhanced disaster recovery and redundancy,” said Szabo. “When you replace machines every four years, you need to forecast future usage years in advance. Now we can make a call to Texas A&M IT if we need more resources.”

Simplified Student Services

To further improve service and reduce costs, the Bush School stepped up use of central resources provided by Texas A&M IT. The Bush School no longer provides additional college email accounts to their students, opting for the university’s student email service. They also moved to centralized NetID login to access college resources. Users appreciate not having to remember another login credential, while the Bush School’s IT does not spend time resetting forgotten local passwords. Next year, the Bush School will be migrating their faculty and staff email accounts to the university’s Exchange email.



“ We can concentrate on strategic initiatives that improve user services, instead of duplicating university-level resources. We have a winning partnership with Texas A&M IT.”

*Ron Szabo
Director of Information Systems,
Bush School of Government &
Public Service*

To read more about how IT is enhancing infrastructure services, visit u.tamu.edu/accomplishments and select “Infrastructure.”

Campus Collaboration Charges Ahead

The Bush School of Government and Public Service moves to enterprise IT services, providing smarter resource use and greater flexibility to a world-class institution.

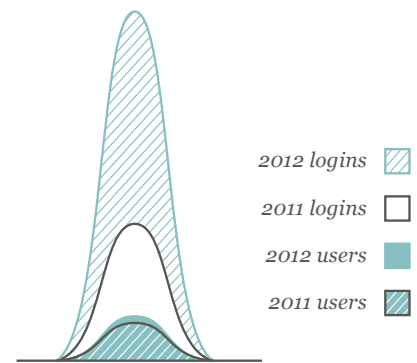


Wireless Upgrades Enhance Campus

The upgraded TAMULink network supports explosive growth of wireless on campus with improved performance and reliability.



TAMULINK WIRELESS USAGE TRIPLES



For a 24-hour period on the same date, wireless login sessions tripled from last year. 469,041 sessions by 41,349 users in 2011 increased to 1,386,376 sessions by 57,100 users in 2012.

Essential to Everyday Campus Life

A stroll through campus proves students and their mobile devices are inseparable. Students thumb smartphones while waiting for the bus, tap lecture notes on tablets in class and congregate with laptops at the Memorial Student Center. Whatever the place or device, every student is always connected at Texas A&M. The rapidly changing mobile landscape presents both challenges and opportunities for the university. Beyond meeting lifestyle needs, the right mobile technology can enrich student learning, enabling innovative educational and research approaches.

Robust Network Meets Mobile Generation Needs

Wireless device proliferation had placed a tremendous strain on campus wireless infrastructure. “Three years ago, you had a 1:1 ratio of user to mobile device, mostly a laptop that you used, closed and then moved on,” said Willis Marti, director of Networking & Information Security. “Now, you have a 3:1 or even 5:1 ratio of devices to users, and they are always on.” To meet surging demand, TAMULink campus wireless was upgraded with more robust Aruba Networks hardware for improved signal strength and reliability. The network runs on the latest wireless standard, 802.11n, providing increased transmission speed and throughput. The upgrade provided a higher physical data rate from 54 megabits per second (mbps) to 300 mbps.

Campus Wireless Use Soars

By deploying 826 new access points, including in 12 residence halls, the robust campus TAMULink network can support a 200 percent increase in wireless sessions. For a 24-hour period on the same date, wireless login sessions tripled from last year. 469,041 sessions by 41,349 users in 2011 increased to 1,386,376 sessions by 57,100 users in 2012.

Howdy Mobile Breaks Record

The mobile version of the Howdy web portal steadily increases in popularity since going live in January 2012. Students quickly noticed how the mobile site provided easier access to their Texas A&M accounts. By the first day of the fall 2012 semester, Howdy Mobile’s 56,714 logins eclipsed the desktop site’s 29,132 logins.

“In my group communication course, it was so important that each member of my group could use the campus wireless to access our Google documents to edit our projects.”

Michelle Kim, Communication ‘15

“It is important for me to be connected all the time because it elevates my learning experience at Texas A&M.”

Katelyn Conrad, Psychology ‘14

“Campus wireless enables me to connect to the Internet in lectures. It is great for supplemental information to my notes.”

Michael Cozzi, Marketing ‘14

“I always need my laptop, iPad and iPhone on campus. It’s great that I can connect all three of my devices through the TAMULink wireless connection.”

Daniel Lumpee, Communication ‘14

“As use of mobile devices increases, the university must employ innovative and cost-effective ways to meet this demand. Texas A&M’s strategy moves mobile technology front and center, instead of taking a backseat to desktop computers.”

Pierce Cantrell
Vice President & Associate Provost for Information Technology

Mobile Web Rising

The mobile technology evangelists may be knocking on your door, spreading the word that websites as we know them are coming to an end. These visionaries are propelling the university into the future, when people can easily access information on any device – phone, tablet, laptop or desktop.

The world is shifting to a mobile-dominated era. Surveys showed students at Texas A&M widely embrace mobile technologies with 93 percent owning cell phones and 81 percent with smartphones. Yet, most university websites are not mobile friendly, frustrating users and hindering outreach.

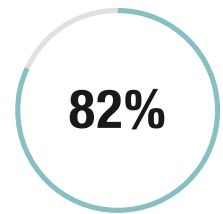
Recognizing the need to rapidly adopt mobile web technologies, the Mobile Strategy Team was formed at the request of Dr. Pierce Cantrell. Enthusiastic team members are catalysts in transforming the university’s online landscape. Their message to every department is simple, “Convert your website to a mobile friendly format.”

Plant a Seed, Reap a Harvest

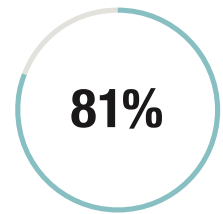
The team got to work and developed the university’s mobile strategy. Its key component is responsive web design. Responsive sites automatically rearrange content based on the visitor’s screen size, allowing one website to work on smartphones, tablets and desktops. A separate mobile site or expensive mobile app is not needed.

To get the word out, the team produced the Go Mobile website, gomobile.tamu.edu, filled with information and resources to help departments achieve a mobile-friendly online presence. The Go Mobile site is garnering attention outside the university, and Texas A&M is becoming known as a leader in mobile strategic planning and communication. The site recently won the best mobile website award from the Special Interest Group on University and College Computing Services (SIGUCCS), an association of information technology professionals at higher education institutions.

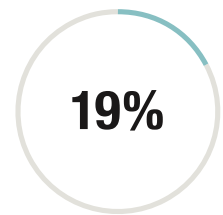
TEXAS A&M STUDENT TECHNOLOGY OWNERSHIP



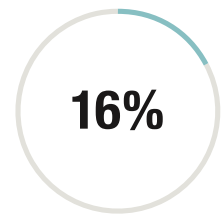
laptops



smartphones



tablets



e-reader

Texas A&M University Student
Life Studies Technology Survey,
Spring 2012

The Mobile Movement Grows Stronger

The Mobile Strategy Team spearheads the transformation of the university's online landscape, propelling Texas A&M to the lead in higher ed mobile.



Expenditure Summary

FOR FISCAL YEAR 2012 – TOTAL \$81.5 MILLION



- \$30.4 M *Computing & Information Services and Networking & Information Security*
- \$18.8 M *Vice President & Associate Provost for Information Technology*
- \$11.3 M *Educational Broadcast Services*
- \$9.5 M *Telecommunications*
- \$7.4 M *Enterprise Information Systems*
- \$2.3 M *Instructional Media Services*
- \$1.9 M *Instructional Technology Services*



- \$49.6 M *Operations & Maintenance*
- \$19.7 M *Salaries*
- \$5.3 M *Capital Equipment*
- \$4.0 M *Fringe*
- \$2.7 M *Wages*
- \$311K *Travel*

Who we are

Texas A&M Information Technology

The Office of the Vice President and Associate Provost for Information Technology and the departments of Texas A&M IT provide services and resources that help the faculty, students and staff of Texas A&M University use technologies to achieve excellence in teaching, research, learning and administrative pursuits.

Computing & Information Services

Computing & Information Services (CIS) provides core IT infrastructure resources and facilities that support the campus and departments within Texas A&M IT. CIS operates central campus servers that house mission-critical data and services, including email, Internet and network access, campus wireless, websites, data center operations and administrative and academic systems. CIS provides campus computer labs, 24-hour assistance through Help Desk Central, hardware and software support, custom application development, discounted software for departments and individuals, as well as the university's Supercomputing Facility.

Educational Broadcast Services

Educational Broadcast Services (EBS) is comprised of KAMU-TV/DT, KAMU-FM and TTVN. They offer a unique synergy of technology and expertise for wide area networking, interactive communications, public broadcasting and audio/video production that broaden the range of services available to the university community. KAMU provides public radio and television broadcasting services to Bryan/College Station and surrounding areas.

TTVN is the wide area data and interactive communications network for The Texas A&M University System, which provides enterprise-level, high-speed data networking services to each of the 11 A&M System university campuses and the seven research and service agencies. TTVN also provides interactive videoconferences with any site worldwide, Centra webconferences and live and archived Windows Media streaming audio and video webcasts.

Enterprise Information Systems

Enterprise Information Systems (EIS) is responsible for the implementation and maintenance of mission-critical, enterprise-wide information systems at Texas A&M. Compass, the web-based student information system, has been implemented at the College Station, Galveston and Qatar campuses. EIS also is responsible for Howdy, a comprehensive web portal, which serves as the "front door" to Compass and connects students, applicants, faculty, staff, former students and parents/guardians to web-based services at Texas A&M.

Instructional Media Services

Instructional Media Services (IMS) provides and supports multimedia equipment and technology tools that enhance and improve the quality of classroom instruction. IMS maintains multimedia/computing equipment in technology-enhanced Smart classrooms across campus. These automated systems allow instructors to use one interface to easily control classroom equipment including the data projector, screen, computer, DVD player and optional equipment such as a Smart Symposium or document camera. IMS personnel also deliver and set up equipment for classes or other functions in rooms without permanent equipment.

Instructional Technology Services

Instructional Technology Services (ITS) fosters effective use of technology in teaching and learning. ITS maintains, administers, and develops university-wide systems, services, and training to support the university's online learning infrastructure. They manage and support eLearning (Blackboard Vista), the university's centralized learning management system, and are coordinating a project to transition to eCampus (Blackboard Learn). ITS provides professional development


opportunities and empowers instructors to use best practices in higher education to enhance student learning through technology. They offer workshops, in-person training, course design consultations, and online resources for instructors to complement various learning styles and promote effective course design.

Networking & Information Security

Networking and Information Security (NIS) maintains and supports the campus and community network backbone and provides network connections. They are responsible for Internet connectivity, campus wireless service and remote office services. NIS is in charge of the information security program that maintains and enhances the overall security posture of the university. Their responsibilities include campus firewall maintenance, incident response and investigation, firewall and sensor configuration and providing information and notification on viruses, attacks and vulnerabilities. NIS initiates and applies IT policies and procedures, as well as develops and administers information security awareness training for students.

Telecommunications

Telecommunications provides fast, reliable and cost-effective telecommunications services. They offer voice services to all A&M System offices in College Station and other offices in Texas and international locations, as well as all network service contracts for all A&M System office locations. They support security and surveillance systems on campus, as well as manage the university's two-way radio systems. Telecommunications also manages the Emergency Alert System, a component of the university's Code Maroon system, which provides the ability to rapidly distribute emergency information to the campus.



Texas A&M **Information Technology**

Dr. Pierce Cantrell

*Vice President and Associate Provost for
Information Technology*

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