

**University of Florida IFAS
Information Technology Task Force 2005
Report**

December 2005

Members

Pete Vergot III (Chair), Jack Battenfield, Benjamin Beach, Dan Cromer, Mary Duryea, Chris Fooshee, Diana Hagan, Jane Luzar, David McKinney, Dave Palmer, Joe Spooner, Jim Syvertsen, Ashley Wood and Al Wysocki. Assisting in the process were Carol Cullifer, Marion Douglas and Josh Wilson and other staff from IFAS OIT and IFAS Communications as needed.



UNIVERSITY OF
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IFAS

Success or failure of IFAS OIT is inextricably linked to, 1) a sustainable, reliable infrastructure, 2) the availability of a competent and stable IT workforce to manage, maintain and update the infrastructure, 3) trained and competent users who can fully utilize the infrastructure to increase productivity, 4) the ability of IFAS OIT to adapt the constantly evolving technology to the changing needs of the users and, most importantly, 5) creation of a recurring long-term planning process to create and coordinate the above.

Executive Summary

Introduction

The world has changed dramatically since the first UF/IFAS Information Task Force issued their recommendations in 1997. At that time, information technology (IT) was important, but not critical to the IFAS missions of teaching, research and extension, and the administration of these functions.

By 2005, access to the Internet, strong web presence, e-mail, listservs, MyUFL and many other systems provided by the IFAS Office of Information Technology (OIT), have become essential to the continued productivity of IFAS faculty and staff. The teaching faculty depends on IT to provide students with access to Internet resources, WebCT and various teaching support services. Researchers depend on IT for global research using the Internet, database applications, and reporting functions. Extension relies on IT infrastructure for communication, collaboration, and information delivery. Administration relies on IT for employee reporting, promotion and evaluation, e-mail, listservs, Polycom for statewide interactive video and Peoplesoft for financial and administrative functions. New delivery technologies such as blogs, audio and video podcasting, and RSS, will increase the need for stable and reliable infrastructure and a well-trained, service-oriented OIT workforce.

In short, the systems and services provided by OIT form the core infrastructure around which the success and productivity of all functions of IFAS, including teaching, research, extension and administration.

Members

The team began their task in May of 2005, members of the taskforce included Pete Vergot III, Chair, Jack Battenfield, Benjamin Beach, Dan Cromer, Mary Duryea, Chris Fooshee, Diana Hagan, Jane Luzar, David McKinney, Dave Palmer, Joe Spooner, Jim Syvertsen, Ashley Wood and Al Wysocki. Assisting in the process was Carol Cullifer, Marion Douglas and Josh Wilson and other staff from IFAS IT and IFAS Communications as needed.

Charges

The charges included evaluating the current function and organizational structure of the UF IFAS information management, hardware and software support, training needs and how these IT services should be structured for the future. The 2005 Task Force focused on extension, teaching, research and administrative needs for the management and delivery of information to our internal and external clientele. An additional task was to recommend a structure and process for the management and coordination of the IFAS Web presence centrally as well as at the unit level.

Recommendations

Administrative Structure

Recommendation I: IFAS leadership should review the basic administrative structure of the Office of Information Technology. Information technology activities should be centralized where possible across IFAS to gain efficiencies and protect security and integrity of servers.

Action Items

1. Review the basic OIT administrative structure and establish clearly articulated expectations for services and products.
2. Implement an industry standard of IT governance framework to improve overall IT operations, policies, and procedures.
3. For OIT to build and maintain credibility among all administrative units as a provider of effective, responsive IT services.
4. Review the need to centralize IT servers to maintain security and reduce financial equipment and operational costs.
5. Increase the current number of coordinated support personnel in the campus units, research and education centers and county offices.
6. Formalize increased coordination between IFAS OIT and unit supported IT personnel.
7. Increase the number of District Extension IT Support Specialist positions to two IT Specialists per district, which will add support for video conferencing/distance education systems with startup expenses.
8. Correct salary inequities between personnel with comparable experience doing the same job
9. Designate a Microsoft Technical Account Manager.
10. Provide technology training in a variety of formats.
11. Develop new training components in the creation and delivery of distance and on-demand education.
12. Divest from services that can be adequately provided by the University of Florida.
13. Conduct an IFAS wide thorough IT user survey at least every three years.
14. Establish that the Information Technology Policy Advisory Committee (ITPAC) review the recommendations of this report, and provide guidance to priorities and timelines.

Funding Model

Recommendation II: The IFAS Software Development Team should be revitalized, enhanced and given support and direction with an advisory structure.

Action Items

1. Establish an Innovative Applications Team for IFAS software research and development.
2. Review and install a leadership and advisory structure for the IFAS Innovative Applications Team.
3. Affirm the continued role of the Innovative Applications Team in working with state and county extension faculty in the selection and development of software tools.
4. Ensure that all IFAS software development and testing is conducted in accordance with industry standard practices, procedures and documentation.
5. Develop software applications in applied research.
6. Assign the Innovative Applications Team the roles of assisting in the development of web interface and database technologies, and investigating new and emerging software information technologies.
7. Ensure that future IFAS software development is centrally coordinated.

8. Increase application development staff as needed to support new applications requested.

Recommendation III: IFAS should develop a reoccurring funding model for information technology hardware, software and personnel that provides for advanced planning and spending. The funding model should consider funding for new and proven technologies and appropriate internet bandwidth that expand IFAS' capacity to fulfill its missions in extension, research and teaching.

Action Items

1. Allocate funds for new equipment and the replacement or upgrade of existing equipment, purchase/lease server software, Client Access License (CAL), hardware, and operating expenses, implementing policies of "lease vs. purchase" for future IT servers and software applications. Consider leasing server space as an option of IT operations.
2. Allocate funds for the additional hardware necessary for database applications and communications.
3. Increase and secure adequate bandwidth to support remote units.
4. Allocate funds for the additional software required for robust system services, including e-mail, Web hosting, database hosting, administrative reporting and analysis.
5. Hire or redirect staff to support proper backups and archiving, IT training and IFAS Helpdesk support.
6. Encourage research faculty to consult with OIT faculty in the IT aspects of grant applications.
7. Encourage OIT to seek external grants to support applied research related to IT applications in agriculture and life sciences.
8. Assemble a group comprised of members from OIT, ICS and UF/AT to facilitate IFAS faculty adoption of new teaching technology.
9. Provide for a replacement for Blue Ribbon, the 4H youth programming data entry system.
10. Ensure that all office computing equipment closely associated with the Extension county operations meets the technical requirements for current and anticipated software systems.

Bringing People Together with Technology

Recommendation IV: IFAS leadership should create an environment that encourages faculty and staff to use the latest technology for bringing people, places, and experiences together without the traditional restrictions of time or geography.

Action Items

1. Expand the number of ports available for use on the interactive video bridge, add multipoint capabilities to select video units across the state, and increase the ease of use with a simplified scheduling program.
2. Increase the number of personnel with expertise in operating the interactive video bridge.

3. Install and support additional interactive video equipment in county offices, REC and campus departments.
4. Provision and support adequate network bandwidth, QoS routers, and configuration for departments, RECs and county extension offices.
5. Provide an IFAS wide web-based centralized calendar.
6. Provide a system for on-line registration and credit card payment for internal and external clientele use at the campus, REC and county extension office level.

Web Management

Recommendation V: Policy relating to web development and standards should be developed related to production and management of an IFAS web presence. A Web Management team should be developed within IFAS to support and train faculty and staff on these new standards.

Action Items

1. Establish an IFAS Web Management Committee with representation from across all units within IFAS.
2. Form a centralized Web Management Team.
3. Ensure that UF IFAS web communications interfaces with eXtension.
4. Implement a Content Management System (CMS) for managing web-based content that can handle content from multiple sources.
5. Develop policy relating to web development and standards and the production and management of web pages.
6. Develop and deliver online web based non-formal “Training and Certificate Programs” to IFAS Extension clientele.

Concluding Remarks

Information Technology is critical to the success of the IFAS mission to develop and deliver objective research-based information to the citizens of Florida. IFAS faculty and staff rely on the Office of Information Technology to provide vital infrastructure and support for statewide internal communications, database and research applications, administrative reporting, and web-based applications.

The future success or failure of IFAS OIT is inextricably linked to, 1) a sustainable, reliable infrastructure, 2) the availability of a competent and stable IT workforce to manage, maintain and update the infrastructure, 3) trained and competent users who can fully utilize the infrastructure to increase productivity, 4) the ability of IFAS OIT to adapt the constantly evolving technology to the changing needs of the users and, most importantly, 5) creation of a recurring long-term planning process to create and coordinate the above elements.

The IFAS Information Task Force 2005 recommends that IFAS allow the Information Technology Policy Advisory Committee (ITPAC) to review the recommendations of this report, and provide guidance to priorities and timelines, which are essential to accomplish the goals of IFAS administration, faculty and staff.

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Introduction

Information Technology is a key means by which IFAS accomplishes its mission to develop and deliver quality knowledge and objective research-based information and to provide learning opportunities in agriculture, natural resources, and life sciences. This report is a review of the state of IFAS information technology (IT) and recommendations for the future.

There have been many successes in IFAS IT since the completion of the *1997 Infostructure Task Force Report*. This *IFAS Information Technology Taskforce Report 2005* will describe our assessment of the successes and the needs of IT administration as well as recommendations for the applications, processes and equipment needed to help IFAS administrators, faculty, and staff assist their clientele.

Members

The team began their task in May of 2005, members of the taskforce included Pete Vergot (Chair), Jack Battenfield, Benjamin Beach, Dan Cromer, Mary Duryea, Chris Fooshee, Diana Hagan, Jane Luzar, David McKinney, Dave Palmer, Joe Spooner, Jim Syvertsen, Ashley Wood and Al Wysocki. Assisting in the process were Carol Cullifer, Marion Douglas and Josh Wilson and other staff from IFAS IT and IFAS Communications as needed.

Charges

In light of changing times and technology, Executive Associate Vice President, Dr. Joe Joyce requested that a new task force provide the IFAS Senior Vice President and IFAS Deans advice on the diverse issues related to information technologies ([Appendix A](#)). Specifically the charge of reviewing the *1997 Infostructure Task Force Report* as a basis for recommendations. The charges included evaluating the current function and organizational structure of the UF IFAS information management, hardware and software support, training needs and how they should be structured for the future. The Taskforce was to focus on administrative, extension, teaching and research needs for both management functions and information for our internal and external clientele. An additional task was to recommend a structure and process for the management and coordination of the IFAS Web presence centrally and at the unit level.

Activities

The team reviewed the recommendations of the *1997 Infostructure Task Force Report*, held discussions with unit leaders and surveyed all IFAS faculty and staff. Information was collected from information technology administrators and experts from other land grant universities on current and future applications, equipment and directions of Information Technologies. The committee met via interactive video from June through December of 2005.

The team divided into subgroups to streamline the tasks. A subgroup reviewed the *1997 Infostructure Task Force Report* and developed a summary report which is included in full as [Appendix C](#). A second subgroup reviewed and reported on the charge for the IFAS Web presence and is reported in full as [Appendix D](#). A third subgroup developed, implemented and reported on a survey to all IFAS personnel and is reported in detail as [Appendix E](#). IFAS Unit leaders and selected IT heads from land grant universities were interviewed. Also included in this report is information from the IFAS

Interactive Video Task force ([Appendix H](#)) along with budget recommendations. All group information was compiled to form this final report, the IFAS Information Technology Task Force 2005.

Background - 1997 Infostructure Task Force Report

In reviewing the *1997 Infostructure Task Force Report*, the group discovered that there were many accomplishments the most important, a major overhaul moving computer processing from a central mainframe VAX system to a PC based server based system for central IT was accomplished. This evolution allowed for most of the advances we currently have within our IT system. In addition, technical infrastructure for internet and centralized services such as the IFAS IT Help Desk was created. Budget issues across many years within IFAS have held back funding, which has caused less than half of the recommendations to be implemented over the eight-year period. Some of the recommendations have become irrelevant over time. Recommendations that remain unfulfilled, but are still relevant, are incorporated into the current recommendations. Details of the findings for the 1997 report are shared in [Appendix C](#).

Recommendations

Over the next few pages, we will identify the areas of IFAS IT structure, recommendations and action items from the IFAS Information Technology Taskforce 2005, with input from IFAS unit administrators, faculty and staff. Details of individual subcommittee reports are located in the [Appendix](#) section of this report.

Administrative Structure

The adequacy of the current structure of the IFAS Office of Information Technology (OIT) has been a great concern. We looked at the hardware, software support and training. The central issue was to find a balance between centralized and decentralized services and hardware so that individual units within IFAS are not recreating or duplicating resources provided adequately at the IFAS or UF level, but are at the same time getting excellent service at the unit level.

OIT Organizational Structure and Management

The mission of the IFAS OIT is to enable faculty and staff to use information technology in support of their teaching, research, extension, and administrative roles. OIT provides tools and support for information delivery to the diverse IFAS family of clients and stakeholders. Its roles include the design, deployment, management, and improvement of information systems, including hardware and software.

The organizational structure of IFAS OIT is displayed in [Appendix B](#). The units within IFAS OIT include Administration, Business Systems, Customer Relations & Help Desk, Network Systems, Server Systems, and Research & Development / Software Systems. There are concerns that the units currently within IFAS OIT are a conjoining of disparate units that may not communicate as one to the IFAS administration, departments, centers and county offices.

In spite of staff shortages, OIT has made noteworthy, significant progress since 1997, with continuing further progress anticipated in the near future. The IFAS Microsoft Active Directory (AD) system, in conjunction with the UF-wide implementation, has added important functionality for network security and access control. Acquiring the hardware necessary for AD, along with Exchange 2003 for e-mail, has provided a network and server environment more stable, more functional, and with better security than ever before.

One challenge IFAS OIT currently faces is the number of administrative units having their own servers. Without centrally operated servers, it is difficult to ensure the security and data integrity of the entire system. Currently IFAS administrative units are encouraged to operate within IT standards needed by UF. Any other academic unit within IFAS would not tolerate this type of operational exposure. As an example, there are three Exchange mail server systems for approximately 3,500 accounts; when only one system is necessary and appropriate a single robust, enterprise-level e-mail server is more cost-effective for IFAS as an Institute than multiple servers. Departments spend local funds on servers when the service could best be handled in the central data center. Individual units have contracted for software services with OPS or student developers without OIT coordination. This same situation exists for Web servers, application servers, and to a lesser extent, file servers and print servers. This has resulted in applications designed without adequate documentation for future support, and in some cases, weak design, poor scalability, application redundancy, and inadequate data recovery plans.

The relationship between the IFAS Computer Coordinators (ICC) and IFAS OIT is very good, thanks to the helpful, cooperative attitude of the membership.

Central IT Hardware and Software Needs

For current operations, many of the central servers necessary for the current environment have been funded or funding is planned. Funding has been provided for a larger data center uninterruptible power source (UPS). A generator for extended power outages is under consideration in light of the importance of information technology for performing essential functions and delivering information to our clients in times of crisis.

IT Support Personnel

At the time of this report, there are six vacant positions in IFAS OIT staffing (see [Appendix B](#)). Some salary resources, such as that of the Assistant Director for Software Systems, have been redirected to pay for needed hardware. Other available salary funds have been used to fund more equitable salaries for existing staff members, and to fund the Web Manager position assigned to IFAS Communications Services. The result is that no departmental funds are available within current budgets to fill vacant positions other than those for the Systems Security position and vacant Extension District IT Support Specialists.

Currently positions that support the Extension Districts are severely understaffed. With the addition of the interactive video components for information delivery into counties, current IT staff cannot meet the expanding needs of the faculty and staff in the 67 offices. Across the Extension Districts, IFAS has over 650 faculty and staff working with PCs and other IT equipment. Each Extension District currently has only one IT Support Specialist traveling from coast to coast. With the changes in the types and

amounts of information technology needed, County Extension Directors have asked for both equipment funds and additional personnel to meet the increased demand for technology and web-based assistance for extension activities and education.

In addition, the IFAS Computer Coordinator (ICC) group members have recently expressed their concern, along with IT staff members, that the current staffing levels are inadequate for the expected level of service for campus and REC units are requesting.

IT Support and Training

The IFAS Helpdesk was formed from a recommendation of the *1997 Infostructure Task Force Report* to assist faculty and staff. Currently, web-based on-demand training and on-request live training for IT is offered to faculty and staff. Soon after the *1997 Infostructure Task Force Report* there were a large number of IT trainings offered at the campus and county level, but in the past few years the number of training events has fallen off with more emphasis being placed into on-line training.

IT training is an ongoing need. A survey across IFAS indicates that the greatest perceived needs at present are in web page design and Microsoft Office products. (See [Appendix E](#), Question 17). We should also ensure training in the use of conferencing, presentation and interactive video technologies, as these were identified along with email as technologies which units intend to make use of in the future ([Appendix E](#), Question 30). University of Florida Academic Technologies offers many non-credit on-campus training opportunities are which free to the UF community. These opportunities can be found at the web site: http://oak.circa.ufl.edu/~cittreg/current_schedule.html

Recommendation I: IFAS leadership should review the basic administrative structure of the Office of Information Technology. Information Technology activities should be centralized where possible across IFAS to gain efficiencies and protect security and integrity of servers.

Action Items

1. Review the basic OIT administrative structure and establish clearly articulated expectations for services and products.
2. Implement an industry standard of IT governance framework to improve overall IT operations, policies, and procedures.
3. For OIT to build and maintain credibility among all administrative units as a provider of effective, responsive IT services.
4. Review the need to centralize IT servers to maintain security and reduce financial equipment and operational costs.
5. Formalize increased coordination between IFAS OIT and unit supported IT personnel.
6. Increase the current number of coordinated support personnel in the campus units, research and education centers and county offices.

Budget: These support positions should have a salary \$50K (UF average is \$53K), including benefits would make cost per position at \$65K. We recommend a guideline of one support person per 50 PC units. We now have 4127 computers in Active Directory, 61 IT-positions in IFAS, of which 26 are in OIT. The 50 to 1 ratio would work out to an additional 17 positions needed (additional positions are recommended in "Action Items" listed below and in other recommendations)

or about \$1.075 million annually in additional salary dollars required to meet this action item.

7. Increase the number of District Extension IT Support Specialist positions to two IT Specialists per district, which will add support for video conferencing/distance education systems with startup expenses.
Budget: These support positions should have a salary \$50K (UF average is \$53K), including benefits would make cost per position at \$65K with additional operating costs of \$7,000 for travel and support for each position. Five additional positions and support would cost \$360,000 annually and startup costs of \$25,000.
8. Correct salary inequities between personnel with comparable experience doing the same job.
Budget: A total annual increase of \$67,000 in base salary increase is needed to bring the central IFAS OIT staff to parity.
9. Designate a Microsoft Technical Account Manager.
Budget: An annual contract with Microsoft of \$49,600 would accomplish this action item.
10. Provide technology training in a variety of formats.
Budget: One position from above (Action Item 6) would accomplish this item.
11. Develop new training components in the creation and delivery of distance and on-demand education.
Budget: This will require an additional position that will work with the current distance education staff and the new IFAS Web Team. The cost of the additional position will be \$45,000, salary and benefits and startup costs of \$5,000.
12. Divest from services that can be adequately provided by the University of Florida.
13. Conduct an IFAS wide thorough IT user survey at least every three years.
14. Establish that the Information Technology Policy Advisory Committee (ITPAC) review the recommendations of this report, and provide guidance to priorities and timelines.

IT Software Development Team

There have been a variety of innovative software applications developed for IFAS, demonstrating leadership in the field. EDIS, DDIS, and FAWN all are examples of this leadership for extension and research. Technology is transforming our world, and IFAS should continue to be a leader in using technology to perform its mission. Currently there is no formal request or ranking procedure for the development of IFAS software.

Complex programs require coordinated teamwork and resources. The IFAS IT software group needs to refocus on the relevant issues and identify resources in order to reestablish our lead in the area. IFAS OIT should be a driving force in encouraging and facilitating our faculty in adopting new teaching technology, such as: instructional design tools, distance learning and learning modules, and virtual labs.

Additional information in this area is in [Appendix F](#). *Recommendations of the EDIS Subcommittee.*

Recommendation II: The IFAS Software Development Team should be revitalized, enhanced and given support and direction with an advisory structure.

Action Items

1. Establish an Innovative Applications Team for IFAS software research and development.
Budget: Funding would include an assistant director for software systems, \$91,000 including benefits.
2. Review and install a leadership and advisory structure for the IFAS Innovative Applications Team.
3. Affirm the continued role of the Innovative Applications Team in working with state and county extension faculty in the selection and development of software tools.
4. Ensure that all IFAS software development and testing is conducted in accordance with industry standard practices, procedures and documentation.
5. Develop software applications in applied research.
6. Assign the Innovative Applications Team the roles of assisting in the development of web interface and database technologies, and investigating new and emerging software information technologies.
7. Ensure that future IFAS software development is centrally coordinated.
8. Increase application development staff as needed to support new applications requested. *Budget: OPS funding \$40,000 annually*

Funding Model

IFAS leadership has made a commitment to continued funding by allowing IFAS OIT to lease servers, a practice which establishes a relatively stable reoccurring hardware expense. However, there are many unnecessary redundancies in the current organization and funding model.

Too often, the primary model within IFAS for IT funding is to use unspent, end of year funds. This model does not lend itself for appropriate planning and spending to meet the needs of the organization. In many cases, group ordering would allow for additional equipment and services and better insight.

IT funding is one of the IFAS state legislative budget requests for 2006-07, however it will be difficult to embrace the support needed to fuel the never-ending need for equipment, software and personnel in this area.

Recommendation III: IFAS should develop a reoccurring funding model for information technology hardware, software and personnel that provides for advanced planning and spending. The funding model should consider funding for new and proven technologies and appropriate internet bandwidth that expand IFAS' capacity to fulfill its missions in extension, research and teaching.

Action Items

1. Allocate funds for new equipment and the replacement or upgrade of existing equipment, purchase/lease server software, Client Access License (CAL), hardware, and operating expenses, implementing policies of "lease vs. purchase" for future IT servers and software applications. Consider leasing server space as an option of IT operations.

Budget: Most of the servers are now covered under lease. An additional \$20,000 annually should complete all current systems.

2. Allocate funds for the additional hardware necessary for database applications and communications.

Budget: One time costs of a SharePoint portal server system \$7,000, with training \$10,000 and a Live Communications server system \$19,000 with training \$6,000. Annual costs of an additional OIT support person \$65,000

3. Increase and secure adequate bandwidth to support remote units.
4. Allocate funds for the additional software required for robust system services, including e-mail, Web hosting, database hosting, administrative reporting and analysis.

Budget: Web hosting, database hosting software \$50,000

5. Hire or redirect staff to support proper backups and archiving, IT training and IFAS Helpdesk support.

Budget: Salary for vacant server administration position \$65,000

6. Encourage research faculty to consult with OIT faculty in the IT aspects of grant applications.
7. Encourage OIT to seek external grants to support applied research related to IT applications in agriculture and life sciences.
8. Assemble a group comprised of members from OIT, ICS and UF/AT to facilitate IFAS faculty adoption of new teaching technology.
9. Affirm the continued role of OIT faculty in working with state and county extension faculty in the development of software tools.
10. Provide for a replacement for Blue Ribbon, the 4H youth programming data entry system. *Budget: Enhancement to UNIFAS system estimate \$20,000*
11. Ensure that all office computing equipment closely associated with the Extension county operations meets the technical requirements for current and anticipated software systems.

Bringing People Together with Technology

Web-based Interactive Video System

IFAS is in its infancy stage on the use of web-based interactive video. Our current system provides a platform for state and county distance learning, a tool for the provision of professional development, and a medium for IFAS-wide communications and administrative meetings. In 2004, IFAS merged its statewide data network, videoconference network and the ISDN dial-up distance education video system into a unified IP based data/videoconferencing service.

Currently IFAS has 16 Polycom units installed in departments and administrative conference rooms, 22 Polycom units installed at REC locations and 23 Polycom units of various capacities located in County Extension Offices. Documentation for IFAS Interactive Video Systems is located at <http://video.ifas.ufl.edu/Sites.htm>. This documentation is provided as a resource to support the videoconference activities within IFAS, which provides simple instructions and an understanding of the various videoconference equipment used throughout the Institute.

Multi-point conferencing services are available for creating multi-site videoconferences. Currently IFAS shares a Radvision Bridge and support personnel with the UF Office of Academic Technology. A Live Communication Server would be used to bridge the gap between the Microsoft /PC-environment and the Polycom environment.

Currently it is difficult to provide the equipment needed to keep current with the fast pace of IT applications and equipment, most extension offices are providing high speed internet bandwidth which, if enhanced, could provide for increase of use of the interactive video system. This in turn will greatly reduce the need for travel for in-service and program planning meetings statewide.

To complete the REC project from past years and add the remote REC sites (Jay, Marianna, Live Oak and Hastings) into the current Polycom system we need to add equipment and possibly upgrade site connectivity. We never installed the equipment or upgraded the connectivity to complete the Duval County site for teaching. Seven departments and selected IFAS Conference rooms need interactive video equipment to allow for faculty to provide in-service opportunities and participate in IFAS wide conferences. Interactive Video equipment in McCarty 1031a was installed two years ago to demonstrate the use and need to use the technology. This room is a vital site for program administration and interviewing and needs upgrading.

Installation at the County Extension Office level is critical to gain the highest efficiency in using the web based interactive video system. In many cases, County offices are willing to pay for the bandwidth needed if IFAS were to install the needed hardware including Polycom systems, monitors and QoS routers. Currently 30 County Extension Offices have the capacity to add interactive video equipment. If IFAS were to invest in bandwidth, all 67 County Extension Offices could be included into a statewide network. This type of ultimate network would enhance all capacities of delivering both formal and non-formal education to the county level, provide a platform for intensive professional development and enhance the “time in county” by our 400+ county faculty members. Additional information in [Appendix H. IFAS Interactive Video Priorities December 2005](#).

Web-based Interactive IFAS Calendar System

Currently many units within IFAS schedule administrative, faculty, student and clientele workshops, events and activities into a great number of calendars. Many of these calendars are web based, some are manually updated and some are paper based.

Clientele have requested that they would prefer IFAS workshops, events and activities in a single location without having to go from web site to web site though the many campus, REC and county units.

New Technologies

Current and emerging technologies that will reduce potential costs and increase the capacity to deliver to clientele include Voice over IP, High Definition (HD) video applications, “push” technologies for delivering information including Podcasting, weblogs, WIFI expansion, increased applications for PDAs and the development of Virtual Field Days via the web.

As IFAS OIT can play a pivotal role in each of IFAS’ commitment in research, extension and teaching, IFAS OIT should strive to contribute in all area with prioritized

goals. IFAS OIT also faces many challenges to deliver quality programs. We are constantly challenged by new technology, 24/7 production systems, balancing new demands and maintaining existing programs with limited resources.

Recommendation IV: IFAS leadership should create an environment that encourages faculty and staff to use the latest technology for bringing people, places, and experiences together without the traditional restrictions of time or geography.

Action Items

1. Expand the number of ports available for use on the interactive video bridge, add multipoint capabilities to select video units across the state, and increase the ease of use with a simplified scheduling program.
Budget: Additional ports or an additional bridge at a cost of \$150,000.
2. Increase the number of personnel with expertise in operating the software and hardware for the interactive video bridge.
Budget: Our current level of 0.5 FTE support is inadequate for UF and IFAS, IFAS should fund one full FTE at increase of \$34,000 (includes benefits).
3. Install and support additional interactive video equipment in county offices, REC and campus departments.
Budget: Details in [Appendix H](#).

Summary of Priority Interactive Video Equipment

- *McCarty 1031a new equipment = \$ 31,650*
 - *Department/REC/County/Conference sites, each site at \$14,550 or \$19,050 = 41 sites = \$ 610,050*
 - *District Extension Director site upgrade \$13,250, three sites = \$ 39,750*
 - *IT Conference room upgrade = \$ 9,000*
- Total = \$ 690,450**

4. Provision and support adequate network bandwidth, QoS routers, and configuration for departments, RECs and county extension offices.
Budget: Reoccurring costs of \$112,200 annually.
5. Provide for an IFAS wide web-based centralized calendar.
Budget: Enhancement to Unifas system estimate \$20,000.
6. Provide a system for on-line registration and credit card payment for internal and external clientele use at the campus, REC and county extension office level.
Budget: It is possible that fees collected could pay for some or all of this employee's salary. The best estimate is between \$35,000, salary and benefits with startup costs of server and software at \$40,000.

Web Management

IFAS Web Presence

The current IFAS web presence is primarily an internal information system with little continuity between Extension, Research and Teaching and among the various Campus, REC and County Office units.

As a result, the presence of IFAS on the web is not consistent, navigation is difficult, location of information is random, and in many cases, the web pages do not meet minimum quality standards such as federal accessibility guidelines. Many of the web site pages are not maintained, over time this results in dated information and a poor presentation of IFAS on the web.

Currently IFAS maintains over 600 sites, a quantity that is difficult to manage by the IFAS web server administrator.

Content Management System (CMS)

IFAS faculty produce a wealth of digital information such as newsletters, video, digital photos, presentations, software, web pages, etc. Very little of this content is cataloged and it is virtually impossible for clientele or other faculty within IFAS or other institutions to reliably find and use this valuable information.

There is not a general purpose Content Management System (CMS) currently operating within IFAS. Centralized Web management can be made more effective if IFAS employs a CMS. CMS's separate the processes of creating content from the formatting, design, and delivery elements. Utilizing a CMS will result in faster and effective production of Web sites and Web information because such a system provides uniform templates, formats, and ease in posting text, photos, and graphics. Since all participants are learning one type of Web production software, training becomes more uniform.

A CMS is an enterprise-wide solution used to organize and facilitate collaborative creation of documents and other content. It is frequently a web application used for managing websites and web content, and requires special client software for editing and constructing articles. Content management systems help by reducing content editing time while providing an additional level of review. Since management is centralized, additional coordination is achieved by the institutional Web leader who will alert all participants when links are broken, sites have been abandoned or had no management for many months, and when information becomes outdated or misleading.

Long before the advent of content management systems IFAS originated the Electronic Data Information System (EDIS), through the initial software vision, as a vehicle for disseminating extension information in the format of tailored recommendations, diagnosis, and decision support tools. Since its inception, EDIS has been used as a vehicle for delivery of extension publications. EDIS is a specialized form of content management system, and due to its object-oriented design, EDIS can exchange information in formats directly compatible with any content management system. In addition to a role as a data source, EDIS may take on specialized content management functions such as newsletters, as well as expert systems, predictive models, calculations, and other decision support tools. Additional information in this area is located in [Appendix D](#).

On-line non-formal Education

There is a great need for the development and delivery of on-line Training and Certificate Programs to transform current and anticipated non-formal education through a web delivery method. Currently UF utilizes a course management system (Web-CT) which could be used for non-formal Extension education.

Faculty in County Extension Offices have requested that IFAS create a web based way for clientele to participate in non-formal training with the features of online registration and payment with a credit card. Examples of current applications in IFAS that could be “transformed” include Pesticide Certification, Master Gardener Training, Extension Energy and Windstorm Mitigation CEUs.

Recommendation V: Policy relating to web development and standards should be developed related to production and management of an IFAS web presence. A Web Management team should be developed within IFAS to support and train faculty and staff on these new standards.

Action Items

1. Establish an IFAS Web Management Committee with representation from across all units within IFAS.
2. Form a centralized Web Management Team.
Budget: The Web Team is being created from an IT position, an existing graphic design position, a county faculty member, and ICS OPS funds. As IFAS moves forward with outsourcing the print and copy service, several lines will become available for the Web Team. It is planned that the current Web writer can be hired from one of the lines, an additional Web designer can be hired, and a content management programmer can also be hired from these lines. There may be additional needs as we move forward but not within the current fiscal year, assuming that the print area lines can be allocated to the Web Team.
3. Ensure that UF/IFAS Web communications interfaces with eXtension.
4. Implement a Content Management System (CMS) for managing web-based content that can handle content from multiple sources.
Budget: The best estimate for a CMS, including the CMS server and software is between \$75,000 and \$125,000. We are not far enough along with the Web Team to have a definite cost at this time. The IFAS programmers can also assist with the management of the CMS server.
5. Develop policy relating to web development and standards and the production and management of web pages.
6. Develop and deliver online web based non-formal “Training and Certificate Programs” to IFAS Extension clientele.
Budget: Using existing WebCT software, this will require an additional position that will work with the current distance education staff and the Web Team. The cost of the additional position will be about \$65,000, salary and benefits. If the plan is to market and manage the certification courses through the incidental project/bookstore, a support position will be needed in the bookstore area. It is possible that fees collected could pay for some or all of this employee’s salary.

Budget Summary

Below is a summary table of the “Action Items” requiring funding.

Recommendation I: IFAS leadership should review the basic administrative structure of the Office of Information Technology. Information Technology activities should be centralized where possible across IFAS to gain efficiencies and protect security and integrity of servers.

<u>Action Item</u>	Reoccurring	One-time
6. Increase the current number of coordinated support personnel in the campus units, research and education centers and county offices.	\$1,075,000	
7. Increase the number of District Extension IT Support Specialist positions to two IT Specialists per district, which will add support for video conferencing/distance education systems with startup expenses.	\$360,000	\$25,000
8. Correct salary inequities between personnel with comparable experience doing the same job.	\$67,000	
9. Designate a Microsoft Technical Account Manager.	\$49,600	\$5,000
11. Develop new training components in the creation and delivery of distance and on-demand education.	\$45,000	

Recommendation II: The IFAS Software Development Team should be revitalized, enhanced and given support and direction with an advisory structure.

<u>Action Item</u>	Reoccurring	One-time
1. Establish an Innovative Applications Team for IFAS software research and development.	\$91,000	
8. Increase application development staff as needed to support new applications requested.	\$40,000	

Recommendation III: IFAS should develop a reoccurring funding model for information technology hardware, software and personnel that provides for advanced planning and spending. The funding model should consider funding for new and proven technologies and appropriate internet bandwidth that expand IFAS’ capacity to fulfill its missions in extension, research and teaching.

<u>Action Item</u>	Reoccurring	One-time
1. Allocate funds for new equipment and the replacement or upgrade of existing equipment, purchase/lease server software, Client Access License (CAL), hardware, and operating expenses, implementing policies of “lease vs. purchase” for future IT servers and software applications. Consider leasing server space as an option of IT operations.	\$20,000	

2.	Allocate funds for the additional hardware necessary for database applications and communications.	\$65,000	\$42,000
4.	Allocate funds for the additional software required for robust system services, including e-mail, Web hosting, database hosting, administrative reporting and analysis.		\$50,000
5.	Hire or redirect staff to support proper backups and archiving, IT training and Helpdesk support.	\$65,000	
9.	Provide for a replacement for Blue Ribbon, the 4H youth programming data entry system.		\$20,000

Recommendation IV: IFAS leadership should create an environment that encourages faculty and staff to use the latest technology for bringing people, places, and experiences together without the traditional restrictions of time or geography.

<u>Action Item</u>	Reoccurring	One-time
1. Expand the number of ports available for use on the interactive video bridge, add multipoint capabilities to select video units across the state, and increase the ease of use with a simplified scheduling program.		\$150,000
2. Increase the number of personnel with expertise in operating the software and hardware for the interactive video bridge.	\$34,000	
3. Install and support additional interactive video equipment in county offices, REC and campus departments.		\$690,450
4. Provision and support adequate network bandwidth, QoS routers, and configuration for departments, RECs and county extension offices.	\$112,200	
5. Provide for an IFAS wide web-based centralized calendar.	\$20,000	
6. Provide a system for on-line registration and credit card payment for internal and external clientele use at the campus, REC and county extension office level.	\$35,000	\$40,000

Recommendation V: Policy relating to web development and standards should be developed related to production and management of an IFAS web presence. A Web Management team should be developed within IFAS to support and train faculty and staff on these new standards.

<u>Action Item</u>	Reoccurring	One-time
4. Implement a content management system (CMS) for managing web-based content that can handle content from multiple sources.		\$125,000
6. Develop and deliver online web based non-formal "Training and Certificate Programs" to IFAS Extension clientele.	\$65,000	
	Totals	\$ 2,143,800 \$1,142,450

Concluding Remarks

Information technology is critical to the success of the IFAS mission to develop and deliver objective research-based information to the citizens of Florida. IFAS faculty and staff rely on the Office of Information Technology (OIT) to provide vital infrastructure and support for statewide internal communications, database and research applications, administrative reporting, and web-based applications.

The future success or failure of IFAS OIT is inextricably linked to, 1) a sustainable, reliable infrastructure, 2) the availability of a competent and stable IT workforce to manage, maintain and update the infrastructure, 3) trained and competent users who can fully utilize the infrastructure to increase productivity, 4) the ability of IFAS OIT to adapt the constantly evolving technology to the changing needs of the users and, most importantly, 5) creation of a recurring long-term planning process to create and coordinate the above elements.

The *IFAS Information Task Force 2005* recommends that IFAS allow the Information Technology Policy Advisory Committee (ITPAC) to review the recommendations of this report, and provide guidance to priorities and timelines, which are essential to accomplish the goals of IFAS administration, faculty and staff. The budget figures included in this report are from current estimates. Technology will continue to change over time; as these changes take place hardware, software, staff and faculty budgeted in this report will also change and need to be reflected in future updates to this report.

We want to thank all the faculty, staff and administrators who gave input to this report. I want to thank all of the members of the *IFAS Information Technology Task Force 2005* committee for their contributions.

Sincerely,



***Pete Vergot III, PhD. – Chair,
IFAS Information Technology Task Force 2005***

APPENDICES

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Appendix A. Charges letter

UNIVERSITY OF FLORIDA
IFAS

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Executive Associate Vice President
392-1971
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392-6932

Telephone (352)

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May 3, 2005

MEMORANDUM

TO:	Pete Vergot, Chair Jane Luzar Joe Spooner Ashley Wood David McKinney Jim Syversten Diana Hagan Mike Kanofsky	Dale McPherson Dan Cromer Jack Battenfield Ben Beach Chris Fooshee Mary Duryea Dave Palmer
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FROM: J.C. Joyce

SUBJECT: Information Technology Task Force

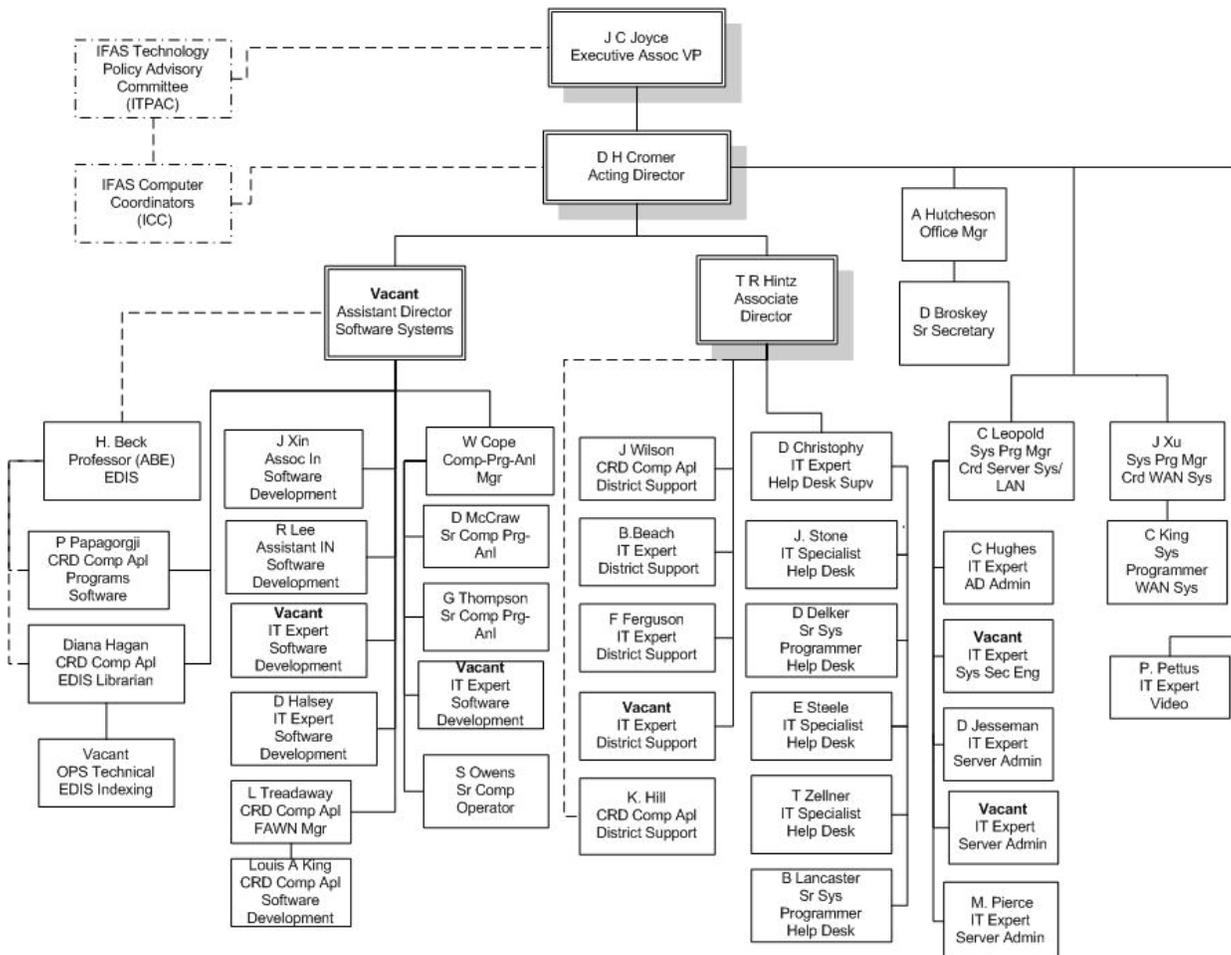
It has been nearly eight years since the issuance of the attached "Infostructure Task Force" report on the IFAS IT organization.

In light of changing times and technology, I would like to request that you serve as a member of a new task force to provide the Senior Vice President and Deans with advice on the diverse issues related to information technologies. Specifically, using the attached report as a basis, you are to evaluate the current function and organizational structure of the UF/IFAS information management, hardware and software support, and training needs and how they should be structured for the future. You should also focus on administrative, extension, teaching and research needs for both management functions and information for our internal and external clientele. An additional task will be to recommend a structure and process for the management and coordination of the IFAS Web presence centrally and at the unit level.

Dr. Pete Vergot has agreed to chair this task force and will be in contact with you to schedule the charge meeting. If for some reason you are unable to serve on this very important task force, please contact Goldie King, IFAS Senior Vice President's Office at 392-1971 as soon as possible.

JCJ/gk
Attachment
cc: UF/IFAS Administrative Council

Appendix B. Current IT Structure



Appendix C. Review of the 1997 Infostructure Task Force Report Recommendations

1997 Infostructure Task Force Report Update Team

Wednesday, June 07, 2006

Executive Summary

The review of the 1997 Infostructure Task Force Report Recommendations commenced on June 7, 2005 with a challenge to this team to analyze and determine how many of the recommendations were accomplished since the release of the report. After several weeks of work the team discovered that 21 of the 57 recommendations were accomplished over the eight year period since the release of the report. The team found that funding held back the implementation of many recommendations after the report was released. The recommendations in the report appear heavily weighted in the areas of training, network infrastructure and technical support.

Areas of Recommendation	Percentage Completed
Teaching	20.00%
Research	42.86%
Extension	45.89%
Administration	11.11%
Accountability	N/A
System Wide	45.16%
Total	27.50%

Analysis of the 1997 Infostructure Task Force Report Recommendations

Teaching

20 % completed

Out of the five recommendations made for teaching, only one was accomplished. A majority of the recommendations were outdated by better technology, dissolved by administration or never implemented.

Research

42.86% completed

A total of three recommendations were accomplished from the six recommendations made. The most note-able of the six recommendations was the need for a data management facility to hold and maintain research data. While this facility is now offered only a few units have used these services. This is also true of the recommendation for general access GIS resources and applications. While it has been offered to all of IFAS only a few units have used it to date.

Extension

46.39% completed

Of the four recommendations made for extension only one was completed. The one recommendation completed represented a combination of two recommendations to improve off-campus support and address policy, standards, computer, and internet access issues for county offices.

Administration

11.11% completed

Administration represented the weakest area of completion of recommendations. Only one of nine recommendations was completed for Administration. That recommendation, for the creation of a centralized helpdesk, was successfully implemented while the remaining recommendations, which focused on training, were not. There was a lack of funding for the training recommendations.

Accountability

N/A

The accountability recommendations were not reviewed as part of the 2005 IT Task Force charge was to avoid any IT activity related to Accountability or the PeopleSoft Portal.

System Wide**45.16% completed**

System wide recommendations were primarily focused on support needs both central and distributed in IFAS, the creation and development of a training system that included a team, improvements in terms of funding for faculty technology needs, and improvement of the information technology infrastructure for IFAS. While this was the second most successful section of recommendations, most of the accomplishments came from internal actions within the central IT unit of IFAS under the leadership of the its employees. The accomplishments consisted of technical infrastructure for internet and centralized services such as the IFAS IT Helpdesk.

Conclusion & Recommendations

A majority of the recommendations contained in the 1997 report were not completed due to a lack of funding and planning, or that the recommendations became outdated before they could be implemented. To avoid this problem with future recommendations, the next release of recommendations from the IT Task Force must include a funding plan for implementation. To be effective, the implementation could include a timeline for various projects, and a list of the parties accountable. In addition to the planning documents, an impact statement for each recommendation would be very useful to the leadership involved in their implementation.

Recommendations

- The next report have a timeline for implementation of recommendations as well as accountability guidelines
- The ITPAC (IFAS IT Policy and Advisory Committee) should manage, track the implementation of the next set of recommendations
- Forty-six recommendations to continue from the previous 1997 report are found in Table 1

1997 Report Update Team Members

- Joe Spooner
Team Lead, CALS IT Services
- Ben Beach
IFAS IT
- Diana Hagan
IFAS IT
- David Palmer
Extension

Figure 1

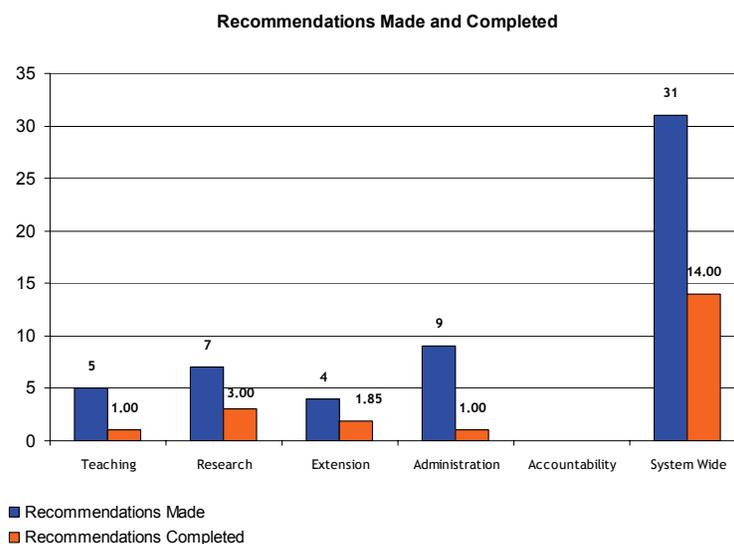


Table 1. Recommendations to Continue From the 1997 Report
--

Recommendation	Recommendation Type	Recommendation Subtype
Core Team for High End Educational Computer Applications	System Wide	
Courseware Standardization	System Wide	
Common Database Format For Teaching Resources	System Wide	
Policy Adopted For Independent Computer Responsibility	Research	
Training Offered with Sufficient Frequency	System Wide	Training
Mechanism Established to Allow Faculty and Staff to Determine Training Program Content	System Wide	Training
Entry Level Technology Training	Teaching	
Extramural Funding Enhancement	Teaching	
Research Informed of Existing Policies For Support	Research	
Research Informed of Training Opportunities	Research	
Comprehensive Suite of Data Analysis Tools Made Available To All Researchers	Research	
Comprehensive Suite of Data Analysis Tools Made Available To News Researchers Upon Hire	Research	
Facility Created For Data Management	Research	
General Access for GIS Resources / Applications	Research	
Off-Campus Unit Support Improved	Extension	
Policy/Standards/Computer/Internet Issues Addressed with Counties	Extension	
Effective Knowledge Delivery Developed for County Offices	Extension	
Permanent Training Team Developed	Administration	
Design Created For Continuing Training of Permanent Staff	Administration	
Generic Unit Level Transition Procedures Manual	Administration	

Developed		
Training Notification System Developed for New Hire Postings	Administration	
Training Notification System Developed for New Employee Start Date	Administration	
Immediate Training Initiated for Support	System Wide	Support
Statewide Support Staff Increased	System Wide	Support
Standard Set of Applications Provided	System Wide	Support
Central Site Established for Downloading Software in an Intranet Environment	System Wide	Support
Incoming Faculty Provided with Funds For Technical Needs (PC, Internet, Applications)	System Wide	Support Internet
Installed Hardware Base Improved	System Wide	Connectivity
Convenient Internet Access Provided to All Faculty and Staff	System Wide	Internet Connectivity
Incoming Faculty Provided with Funds For Technical Needs (PC, Internet, Applications)	System Wide	Internet Connectivity
Funding Immediately Given to IFAS IT for Training Travel Expenses (~\$9,800.00 1997 dollars)	System Wide	Training
Permanent Training Team Developed (~\$109,000.00 1997 dollars)	System Wide	Training
Permanent Vehicle Established for Development of Training Content and Demands	System Wide	Training
Permanent Training Team Developed (~\$109,000.00 1997 dollars)	System Wide	Training
Comprehensive Training Program Established for New Faculty	System Wide	Training
Help Desk Identified As Single Resource in IFAS for Support and Training	System Wide	Support
Readily Available Technicians and Automated Support System	System Wide	Support
Event Analysis as Main Driver for Reactive Training	System Wide	Support
Defines Levels of Problems and Responsibilities in IFAS	System Wide	Support
Process Established	System Wide	Support
Tracking System Established	System Wide	Support
DCSS Increased to Reasonable Levels (10 on 15.3.3)	System Wide	Support
DCSS Reassigned Geographically	System Wide	Support
Mechanisms Established to Make DCSS Feel Part of a Larger Team	System Wide	Support
Adequate Operating Expenses Made Available to DCSS	System Wide	Support Internet
Equipment Replacement Program Established	System Wide	Connectivity
Upgraded Connectivity Encourage through Collaboration with County Governments	System Wide	Internet Connectivity

Appendix D. Report of the IT Task Force 2005 Subcommittee on Web Needs

Introduction

The World Wide Web is arguably the most efficient and effective communications and knowledge delivery tool available to UF/IFAS. IFAS' Web presence enhances the teaching, research and extension missions, internal and external communications, and can be used to deliver services such as on-line courses and certification programs, secure repositories, calendars, videoconferencing, registration and payment, etc. The use of such Web-based services is not only economical and efficient, but it also allows us to extend our reach of our audience wherever they are, with the information they need, whenever they want it.

Web based information is essential to our teaching, research and extension missions. Student services and instruction increasingly utilize the Web, where technologies developed for distance education increasingly find use in the brick-and-mortar classrooms as well. For researchers, the Web becomes an important locus for collaboration and communication in support of research activities. Extension must use the web as one of its important information delivery tools. The Web is further used IFAS-wide for internal communication and collaboration.

To use the Web effectively, IFAS must provide appropriate staffing, equipment and support. IFAS must also establish clear and consistent Web management policies to ensure the quality of Web-delivered information, both in content and technical aspects, and provide coordination and support to those who contribute to IFAS' overall Web presence.

This type of centralized Web management can be made more effective if IFAS employs a content management system (CMS). Content management systems separate the processes of creating content from the formatting, design, and delivery elements. Utilizing a CMS will result in faster and effective production of Web sites and Web information because this system provides uniform templates, formats, and ease in posting text, photos, and graphics. Since all participants are learning one type of Web production software, training becomes more uniform. Content management systems also help by reducing content editing time while providing an additional level of review. Since management is centralized, additional coordination is achieved by the institutional Web leader who will alert all participants when links are broken, sites have been abandoned or had no management for many months, and when information becomes outdated or misleading. The system can be constructed in a number of workflow models that best suit the resources of a department, center, office, and unit. CMS allows dynamic up-to-date and time released content delivery while easing overhead in managing a consistent look and feel.

Any CMS implemented for IFAS should be able to handle content from multiple sources, with the intention that existing Web based services (such as EDIS, DDIS, and FAWN) and the CMS will work together as a blended system providing managed content. Long before the advent of content management systems IFAS originated the Electronic Data Information System (EDIS), through the initial software vision, as a vehicle for disseminating extension information in the format of tailored recommendations, diagnosis, and decision support tools. Since the mid-1990s, EDIS has become strictly a vehicle for delivery of extension publications. As such it is a specialized form of content management system, and due to its object-oriented design,

EDIS can exchange information in formats directly compatible with any content management system. In addition to a role as a data source, EDIS may take on specialized content management functions such as newsletters, or calendaring systems, as well as expert systems, predictive models, calculations, and other decision support tools. With the launch this fall of the new Extension Web site, "Solutions for Your Life," perhaps renaming EDIS as a complement for this site could be discussed by the Publications Steering Committee.

Currently, Cluster Editors coordinate and process EDIS publications. Cluster editors function in their departmental cluster by assisting with all written information that comprises a department's Plan of Work. The cluster editor's role in their cluster will be expanded by providing communications review for all managed Web content.

UF/IFAS Web communications must interface with eXtension, an Internet-based, customer-centered, virtual, and evolving educational environment, which will provide national land-grant university system information for anyone, anywhere, anytime, on any Internet-ready device. UF/IFAS information from the Web will be an integral part of the national eXtension initiative, and must be completely compatible with content management systems adopted by the eXtension leadership. The eXtension concept focuses land-grant university information on current and future customers of the Cooperative Extension System by providing national strength with local focus. This initiative is endorsed by Extension nation-wide with funding from USDA Cooperative State Research, Education, and Extension Service and the Cooperative Extension System. UF/IFAS is positioned to provide eXtension with a wide array of resources, including electronic documents, Web sites, diagnostic tools, lesson plans, Internet-based in-service and other training, distance education credit and non-credit courses, audio programs, and other Internet-based communication programs. There should be a contact person in UF/IFAS that is responsible for coordinating the resources that will be used by the eXtension initiative. This individual will work closely with the Dean for Extension and his administration, goal and focus group leaders, IT staff members, the software development group, communication services personnel, and other UF/IFAS faculty and staff to coordinate and advise UF/IFAS on this national initiative, and assist in providing resources to the project.

There is a great need for the Development and Delivery of Online Training and Certificate Programs to transform current and future non formal web delivery. Software is available to assist in this activity with the possibility of extending the use of WebCT to non formal Education or to consider use of Macromedia Breeze or Breeze online. Current applications in IFAS that could be "transformed" include; Pesticide Certification, Master Gardener Training, Extension Energy and Windstorm Mitigation CEUs and others.

An enhanced Web communications image provides an opportunity for UF/IFAS to market more effectively externally through unified image and current and continual updates of information communicated through the Web. The Web Team Committee should work directly with all UF/IFAS personnel involved in marketing to help promote the new Web presence. Internally, the concept of centralized Web management will not be totally embraced by all of UF/IFAS. Therefore, an effort to educate and market the concept of centralized Web management through assistance from the IFAS Computer Coordinators and IT staff, as well as staff training in CMS will provide some internal promotion.

A realistic schedule should be provided for announcements, trainings, phase in and launch date for the new system. A test site should be constructed to allow a number of review teams, both internally and externally, to discuss and advise the Web committee on appearance, content, and usability. A list of all departments, centers, offices, and units, participating in the new system, with assigned ownership and department, center, office, and unit contacts should be posted through the Web. Assigned responsibility through this distributed system will allow timely updating and maintenance.

Development of a Web Team

To the degree practical it is recommended that centralized Web management be implemented use existing talent, equipment and programs. We recommend that the positions report to the Director of IFAS Communication Services and be located close to those who currently work on the Web pages and where additional communications and graphic support are available.

It is recommended that we develop an IFAS Web Leader with the responsibilities to:

- 1) Maintain the IFAS sites
- 2) Develop and implement a plan for a Content Management System throughout IFAS Departments and Units
- 3) Manage information architecture and search capabilities
- 4) Work with the homepage committee (with deans and VP approval) to establish standards consistent with UF standards (consideration includes graphics, links to UF and IFAS, url identity, information on contacts and last up-date date)
- 5) Use technology/software to track where Web site users come from and where they go, to track broken and non-functioning links
- 6) Provide Web templates and logos for others to use
- 7) Assist Units in obtaining resources to maintain their Web sites, including training
- 8) Review all IFAS Web sites to ensure adherence to applicable standards
- 9) Develop and implement a plan for having Spanish versions of IFAS' Web pages

Additional recommended positions include:

Marketing and Training Manager of Web delivery and content management to assist departments in the development of web pages and assist faculty planning for content management transition.

IT Programming Manager for Content Management software development and design.

Web Page Manager/Coordinator for Graphics and Design of all web pages within the IFAS Web system and to assist IFAS units, departments and county offices.

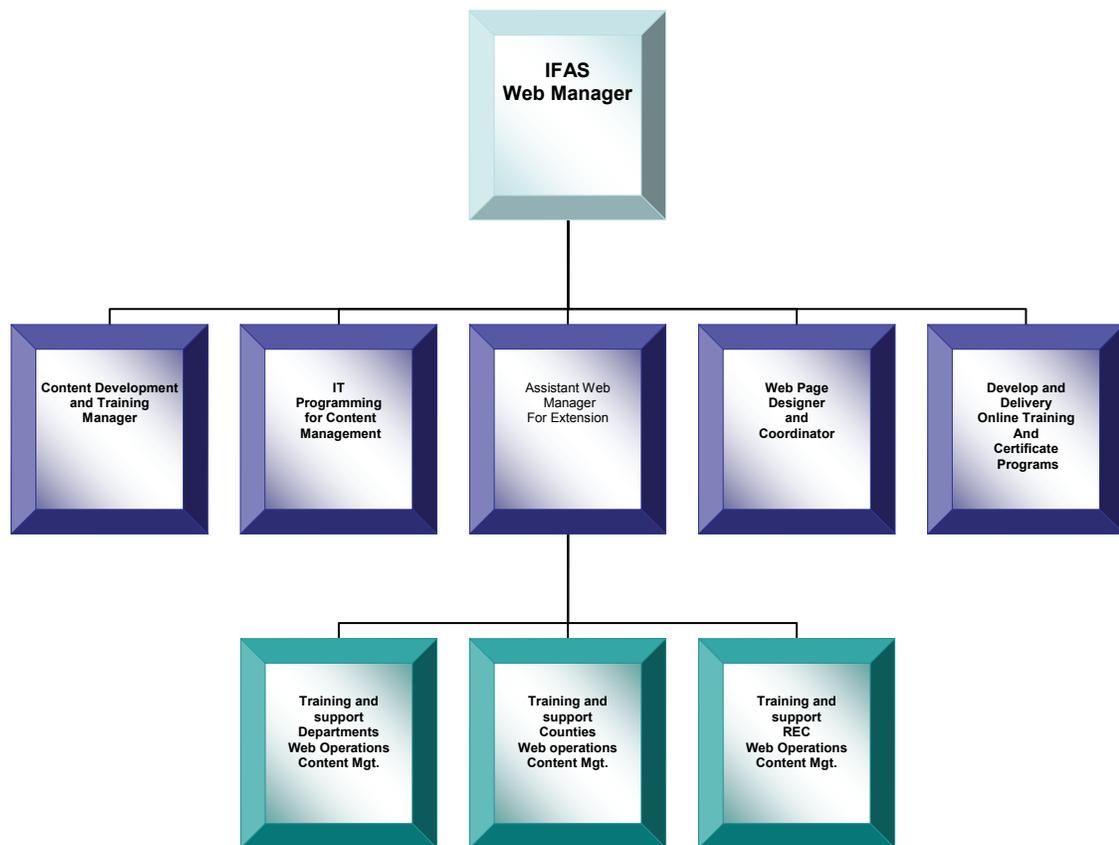
Manager for the Development and Delivery of Online Training and Certificate Programs to transform current and future non formal web delivery. This individual will help extend WebCT to non formal Education or consider use of Macromedia Breeze or Breeze online. Current applications in IFAS that could

be “transformed” include; Pesticide Certification, Master Gardener Training, Extension Energy and Windstorm Mitigation CEUs and others.

Multiple positions (three to four) for:

Training and Support Specialists, to assist faculty and staff in Departments, Counties and Units with Web Operations and Content Management

OPS funds are needed to hire specific skills/programming needed on a short-term basis for special applications.



These positions would work closely with the IFAS Web Leader, with communications, technology, and graphic design skills to complement those of the IFAS Web Manager. In addition, the managers and trainers would have specific responsibilities for working with Extension and the 67 county offices to insure effective and consist Web presence.

The Web leader and managers would take advantage of the research and suggestions of the existing Extension committee that have been working toward improving Extension’s presence on the Web. The Web Leader could also serve as the initial liaison with national **eXtension** initiative.

The IFAS Web Team must have a combination of technical, graphic and communication skills appropriate to meet the needs of IFAS. College degrees should be required and knowledge of IFAS, Extension and agriculture is highly desirable. The

IFAS Web Leader must have some database experience. All positions must be customer friendly.

Additional Web support personnel will be needed to meet growing/changing demands, such as specialists for developing course modules for implementing on-line registration and payment services, developing better calendaring systems and for handling authentication, copyright and other legal issues. The IFAS Web Manager in consultation with the Web Management Committee, deans and senior vice president should determine the priority for adding additional personnel. Additional IT support will be needed for server management and Content Management programming on the server.

Equipment and Other Expenses

New equipment and expense funds will be needed to support the growing/expanding use of the web by IFAS faculty, staff and clients. New, high capacity reliable servers are needed to provide additional space for ever increasing demands. A Development Server (test server) is needed for developing test sites and applications. Other needs include a backup generator and UPS, Content Management Hardware and Server Software, Analysis Software and training and travel.

Immediate needs include reliable servers for EDIS as well as the new Extension Web efforts. Leasing may provide an option for equipment that tends to have a short life. Often, equipment and software needs to be replaced within three years with newer technology that provides faster, better equipment with greater capabilities at lower prices. Currently, we have over 600 custom host names (CNAMEs) for websites on two HP servers. To reliably handle Web needs, IFAS needs one front end server, one back end server, as well as two-to-three load balanced WebDAV front ends. Our current web servers have unpredictable reliability, and are at the end of their lifespan.

The ability to consolidate servers and their functions will greatly benefit IFAS and our ability to handle current web and email use as well as new applications that include on-line registration, payment for programs and services, on-line courses, personalized portals, video presentations, etc. A development/test server for developing test sites and applications is also needed so that new application and programs may be made functional without impacting on the stability of existing web programs, sites, etc.

A back-up generator and UPS systems are needed for the new servers and other IT equipment to ensure clean, reliable power sources in case of power loss, power surges, and power outages. Additional funds are needed for office equipment and furniture, training and travel.

Policy

Policy relating to Web usage and standards would be recommended by a revised version of the current Home Page Committee with approval required by the Vice President and Deans. This new IFAS Web Management Committee should have representatives from IFAS Communications Services, IFAS IT, Marketing, EDIS, CALS, Extension, Research, and faculty from campus units, county and research centers.

Considerations for the web management policy include:

- Peer review, ongoing support and periodic review of content
- Sun setting and archiving of outdated content
- Branding issues
- Administrative responsibilities at unit level

Implementation

The IFAS Web Manager should be hired first. As needed for development the additional manager, training, and OPS positions should be brought into the team. The purchase of servers, UPS and generator should be given priority. The purchase and or development of a content management system (CMS) should take place after the new Web Team has solved some immediate problems, assessed IFAS' content management needs, and surveyed the suitability of available CMS solutions. While IFAS' Web presence should be centrally supported and managed, the long-range plan is that content production and support must occur at the unit level.

Appendix E. All-IFAS Survey Results

A web-based survey was targeted to all IFAS personnel to better understand the information technology needs and issues. The survey was conducted from September 22-29, 2005. A total of 393 usable surveys were completed. In general, there was adequate representation across demographic variables. Key respondent characteristics are as follows:

- 53% male, 47% female
- Representation across all age groups with the heaviest responses from the 42-50 (43%) and 51-60 (38%) age groups
- 23% have spent less than 5 yrs with IFAS, 24% (5-10 yrs), 11% (11-15 yrs), and 42% (16 or more yrs)
- 47% on-campus, 27% at a REC, and 26% at an Extension office
- County Extension office locations: Central (35%), Northeast (22%), Northwest (18%), South-Central (16%), and South (9%)

Responses by job title:

- Agent (22%)
- Support Staff in Gainesville (21%)
- Faculty in Gainesville (18%)
- Support Staff at a REC (13%)
- Administrator (9%)
- Faculty at a REC (8%)
- Specialist in Gainesville (5%)
- Specialist at a REC (2%)
- Support Staff at a county (2%)

Question 1. How do you use computers in your program?

The most common uses of computers was for: word processing, email, Internet browsing, developing educational material, developing multimedia-based presentations, and database management.

Question 2. Are the computers and technology meeting your needs?

80% said computers and technology are meeting their needs, while 20% indicated computers and technology are not meeting their needs.

Question 3. Are you personally involved in developing or teaching, or delivering formal or non-formal education and Extension programs via distance education?

75% of the respondents indicated that they were not personally involved in developing or teaching, or delivering formal or non-formal education and Extension programs via distance education.

Question 4. Respondents by department that are personally involved in developing or teaching, or delivering formal or non-formal education and Extension programs via distance education.

- Agricultural Education and Communication(6)
- Agronomy (9)
- Animal Sciences (7)
- Entomology and Nematology (25)
- Environmental Horticulture (24)
- Family, Youth, and Community Sciences (12)
- Fisheries and Aquatic Sciences (5)
- Food and Resource Economics (16)
- Food Science and Human Nutrition (13)
- Horticultural Sciences (15)
- Microbiology and Cell Science (2)
- Plant Pathology (10)
- Soil and Water Science (14)
- Statistics (13)
- Wildlife Ecology and Conservation (9)
- Other (16)

42% of these courses are taught once per year, while 35% are taught on a short-term basis (less than a semester in length), and 23% are offered once a semester.

Question 8. Select all of your current uses of the Web in the following ways:

The most popular uses of the web were for general information gathering, posting of general information, posting of Extension information, posting of workshops and other events and for research.

Question 9. What computer hardware problems do you typically experience?

Responses per category ranged from a low of 17 to a high of 112. The most commonly cited computer problems were printers (112), hard drives (106), external devices such as USB, firewire, etc. (79), and CD-ROM/DVD-ROM (66).

Question 10. Who do you go to for help for your hardware problems?

The most commonly used resource respondents turned to for help with hardware was local IT support. The remaining resources in order of use are as follows:

- Local IT (37%)
- IFAS IT (19%)
- Knowledgeable co-worker (16%)
- Websites and manufacturers (8%)
- District IT (7%)
- Other (5%)

Question 11. Who do you go to for computer hardware purchasing advice?

The most commonly used resource respondents turned to for help with hardware purchasing advice was local IT support. The remaining resources in order of use are as follows:

- Local IT (40%)
- Knowledgeable co-worker (17%)
- Websites (15%)
- Manufacturers (10%)
- District IT (7%)
- Other (6%)
- IFAS IT (5%)

Question 12. What computer software problems or issues do you typically experience?

Responses to this question were fairly evenly split:

- Excessive spam (21%)
- Runs too slowly (17%)
- Compatibility/conflicts (14%)
- Not having the latest version (13%)
- Crashing (12%)
- Pop ups (11%)
- Installation issues (9%)
- Other (3%)

Question 13. Who do you go to for software problems and issues?

The most commonly used resource respondents turned to for help with software problems was local IT support. The remaining resources in order of use are as follows:

- Local IT (35%)
- Knowledgeable co-worker (20%)
- IFAS IT (17%)
- Websites (12%)
- District IT (7%)
- Manufacturers (5%)
- Other (4%)

Question 14. Who do you go to for software purchasing advice and issues?

The most commonly used resource respondents turned to for help with software purchasing advice was local IT support. The remaining resources in order of use are as follows:

- Local IT (37%)
- Knowledgeable co-worker (22%)
- Websites (17%)
- District IT (7%)
- IFAS IT (6%)
- Other (6%)
- Manufacturers (5%)

Question 15. Where do you get your primary IT support from?

The most commonly used resource respondents turned to for help IT support was local IT support. The remaining resources in order of use are as follows:

- Local IT (60%)
- IFAS IT (14%)
- District IT (10%)
- Knowledgeable co-worker (9%)
- Other (4%)
- Websites (2%)
- Manufacturers (1%)

Question 16. How would you rate your level of IT support?

In general, the respondent were very pleased with their level of IT support, with 66% of the respondents indicated either a 4 or a 5 on a scale were 1 was poor and 5 was excellent. Only 9% indicated their level of service was a 1 or a 2, while 25 percent rated their level of service as average by selecting 3 on this 5 point scale.

Question 17. What types of IT training do you need?

The most commonly identified IT training need was for web design (22%). The remaining training needs are listed in order of identified need:

- Web page design (FrontPage, Contribute, Dreamweaver, etc.) (22%)
- MS Access (database development and use) (14%)
- MS Excel (spreadsheet design and use) (13%)
- MS Publisher (newsletters, brochures, etc.) (13%)
- MS PowerPoint (presentation design) (11%)
- MS Outlook (calendar, E-mail, etc.) (8%)
- Windows operating system (2000, XP) (7%)
- MS Word (word processing) (6%)
- Other (6%)

Question 18. Who do you go to for software/hardware training?

The most commonly used resource respondents turned to for help with software/hardware training was local IT support. The remaining resources in order of use are as follows:

- Local IT (24%)
- Knowledgeable co-worker (21%)
- Web/Tutorial (20%)
- Other (12%)
- UF Help Desk (9%)
- IFAS IT (5%)
- District IT (5%)
- Magazines (4%)

Responses in the other category included CITT on campus, to self-help through UF and private firms and adult education classes from various sources.

Question 19. How would you rate your level of IT support regarding software/hardware training?

In general, the respondent were pleased with their level of IT support, with 54% of the respondents indicated either a 4 or a 5 on a scale were 1 was poor and 5 was excellent. 17% indicated their level of service was a 1 or a 2, while 29 percent rated their level of service as average by selecting 3 on this 5 point scale.

Question 20: Please select the following sources of IT training that you are aware of. (Check all that apply.)

Respondents expressed relatively low rates of awareness regarding the IT training that is available. The percentage of respondents that indicated they were aware of specific IT training is presented below:

- IFAS live training classes (31%)
- Center for Instructional Design (20%)
- UF Computer Challenge (19%)
- NetG (10%)

These low levels of awareness may be somewhat over stated depending on the extent of non-response bias in the answers (that is some or many people may have chosen to skip this question altogether).

Question 21: Do you know how to request additional technology training?

72 percent of respondents indicated they really did not know how to request additional technology training, while 28% said they did. This is an area that IFAS IT can focus on.

Question 22: Does technology training/retraining occur often enough to keep your skills updated?

The majority of respondents indicated that training/retraining need to occur more often to keep skills current, while 36% said the frequency of training/retraining is just right and 1% said it was too often.

Question 23. What training did you receive on existing systems or applications when you started with UF/IFAS?

The most commonly received training upon joining IFAS was “none” (52%). The remaining training received are listed in order of identified trainings:

- None (52%)
- E-mail (14%)
- Other (8%)
- UF Library System (6%)
- Administrative Systems (5%)
- Calendar (5%)
- Fax (5%)
- Printing (3%)
- Student Advising (2%)

There are a number of opportunities to increase skill levels of incoming IFAS personnel based on the low percentages of training received by respondents. The key will be to identify the priority areas for training.

Question 24. What computer training had you received prior to coming to UF/IFAS?

The most commonly received training prior to joining UF/IFAS was “other” (16%). The remaining training received are listed in order of identified trainings:

- Other (16%)
- Word Processing (12%)
- E-mail (9%)
- Spreadsheet applications (9%)
- WWW access (9%)
- Statistical Analysis (8%)
- Database management (7%)
- Multimedia for presentation (6%)
- Preparation of educational materials (6%)
- Graphics production (5%)
- Web page development (4%)
- GIS (2%)
- Instrumentation (2%)
- Modeling/simulation (2%)
- None (2%)
- Economic Analysis (1%)

The explanations for “other” were not very revealing. There appears to be great opportunity to train the basics for incoming IFAS personnel based on a comparison of responses from questions 23 and 24. For example, only 12% of respondents indicated any prior training on word processing.

Question 25: Would you attend training for computer-based teaching skills development?

74% of respondents indicated they would attend computer-based teaching skills development, while 24% indicated they would not.

Question 26: Would you prefer training via (rate each item on a scale of 1 - 5, with 1 being not preferred and 5 being most preferred):

An average of 64 percent of respondents preferred instructor-led training and an average of 78 percent preferred hands-on training and being able to follow along on a computer compared to only 25 percent who preferred written training via handouts and books or 37percent who preferred video and CD-ROM/DVD-ROM/Web training.

	Not Preferred (1 & 2)	Indifferent (3)	Preferred (4 & 5)
Instructor-led training	19%	17%	64%
Hands-on (follow along with your own computer)	13%	9%	78%
Written training (handouts, books)	54%	21%	25%
Video (on CD/DVD or on Web)	36%	27%	37%

Question 27: How far would you be willing to travel for software or IT training?

Generally speaking, people would like to travel as little as possible for IT training.

- I would not travel for IT training (37%)
- 50 miles or less (35%)
- 51 - 100 miles (15%)
- 101 - 150 miles (6%)
- more than 200 miles (5%)
- 151 - 200 miles (2%)

Question 28: Do you have a local staff person responsible for your local area network (LAN) and IT needs?

- Yes (75%)
- No (16%)
- Unsure (9%)

Question 29: Do you feel you need a local IT staff person?

- Yes (75%)
- No (13%)
- Unsure (12%)

Question 30: What types of technology do you or your unit plan to use in future projects? (Check all that apply.)

It is not surprising that the technology the respondents are most likely to use in their future projects include email (25%), conference calls (19%), video conferencing (18%), and wireless technology (16%).

- E-mail (25%)
- Conference calls (19%)
- Videoconferencing (e.g., Polycom) (18%)
- Wireless technology (16%)
- Microsoft Netmeeting (8%)
- High-Powered computing (e.g., in biotech) (4%)
- Voice over IP (5%)
- Microscopy (3%)
- Other (Please explain.) (2%)

Question 31: What can IT do to support the plans in the previous question? (Check all that apply.)

- Support (35%)

- Training (32%)
- Upgrade infrastructure (servers, network cabling, etc.) (33%)

Question 32: Describe the responsiveness of IFAS IT to your needs?

IFAS IT has some opportunities to improve responsiveness to IT needs of the respondents. While 55 percent of the respondents found IFAS IT responsiveness acceptable, 31 percent found IFAS IT to be slow or non-responsive.

- Acceptable (55%)
- Slow response (26%)
- Quick response (14%)
- No response (5%)

Question 33: What technology needs exist in your unit. (Check all that apply.)

- The most-often cited technology need for units were for additional computing speed and capacity and for wireless networking capability.
- Additional computing speed and capacity (32%)
- Wireless networking capability (31%)
- High-speed Internet access (15%)
- Networking capability (13%)
- Other (Please explain.) (9%)

Question 34: Are any of the technology needs listed above urgent? If so, please explain.

- Two years goes by before we know a new version of a software program exists, that we should be using it, that it runs better, or how. WHY? WHY do IT people keep secrets, job security? They sit in their cubicles all day, they do not communicate.
- On line registration is something we need to address. Also would like to incorporate flash technology and need instruction on that and software.
- I would like my Mac to link to the existing network.
- Polycom.
- Many grants will not pay for computers. New mechanisms are needed to ensure that faculty and their staff have updated computers in order to work effectively.
- Wireless networking will allow the users to be able to work in a different places
- The Entomology & Nematology Department has only one speakerphone and one room in which it can be used. Polycom has been limited but is improving and is urgently needed to minimize meeting travel.
- Reliable supported centralized services are critical and necessary for growth of our program. Staffing at IFAS IT is way below sufficient and projects are on hold or simply not scheduled due to lack of manpower.
- Fix EDIS and UNIFAS! The amount of time that has been wasted by making everyone use these primitive and buggy programs (and their forebearers) is astronomical and unconscionable.
- IFAS technology has been very good and up-to-date as far as my job is related. Our in-house IT Specialist immediately responds to any problems or updates needed. Most technology difficulties come from outside our control and capabilities.
- community colleges use LCD in their classrooms and I've personally seen employees have to supply their own laptop or LCD computers to do their jobs
- High speed access is a critical need. IFAS has so far been unable to upgrade our 128K frame relay. county will soon provide T1. Details to be worked out
- Yes, aside from poor ISP connectivity we experience regular problems with LAN connectivity across the bulk of the Jay Research Station. Also, this leads to bottlenecks with available computing capacity.
- Wireless infrastructure is needed to bring up par with other universities.
- I tried to explain, but was cut off in this dialogue box by a 300-character limit. In short, the existing polycom technology capabilities need help and have a long way to go before being useful.
- Database management, so for time saving to manage data and simple query info that we need.
- Computing speed and capacity are an issue since FRED seems to want to do things on their own. Wireless is a luxury that would be nice, not necessary at this point.
- Anything that reduces crashes, virus, spam, popups, etc.!

Question 35: For your predominant area (Extension, Research, Teaching, or Administration) what do you see as the top 4 most urgent technology needs?

174 people responded, listing a total of 419 descriptions of urgent technology needs. The needs were in the following areas, in order of frequency:

- Training (74 mentions, 17.6%)
- Videoconferencing/Polycom (43 mentions, 10.2%)
- Hire more tech staff (43 mentions, 10.2% -- 21 web, 22 tech support)
- Upgrades to workstation -- hardware or software (42 mentions, 10%)
- IT support -- more responsive, more knowledgeable, better customer service (41 mentions, 10%)
- Network – servers, network speed, more robust (30 mentions, 7.1%)
- Wireless (22 mentions, 5.2%)
- Distance Education (18 mentions)
- High Speed Internet connection (17 mentions)
- Email -- spam filters, increase storage, virus protection 17 mentions)
- Equipment (16 mentions)
- Instructional Design assistance (11 mentions)
- Content Management System (10 mentions)
- EDIS (8 mentions)
- More money (8 mentions)
- Extend UF resources to the county (8 mentions)
- Software development (6 mentions)
- Telecommunications/conference calling (3 mentions)
- More time (3 mentions)
- GIS (3 mentions)
- Online-registrations
- Disaster Backups
- Service Level Agreements

Question 36: To your knowledge does there exist a regularly organized system for evaluating faculty and staff hardware or software needs?

- Yes (5%)
- No (69%)
- Unsure (26%)

Question 37: Is a regularly organized system for evaluating faculty and staff hardware or software needs needed?

- Yes (46%)
- No (20%)
- Unsure (34%)

Question 38: For your unit, is there a regularly scheduled program to upgrade state owned equipment (computers, servers, etc.)?

- Yes (18%)
- No (46%)
- Unsure (36%)

Question 39: If you are in a county Extension office, is there a regularly scheduled program to upgrade state-owned equipment (computers, servers, etc.)?

- Yes (5%)
- No (13%)
- Unsure (14%)
- Does not apply (67%)

Question 40: In the past, conflicts occurred in county offices between the need for county governments to restrict the software placed on county-owned machines and the needs of state Extension programs. The conflicts occurred with respect to policy, standards for hardware and software, and connectivity. Does this conflict still occur?

- Yes (17%)
- No (9%)

- Unsure (18%)
- Does not apply (66%)

Question 41: If the answer to the previous question is "Yes," what can IT do to help?
(Check all that apply.)

1. Establish a dialogue with the county to overcome these conflicts
2. Find ways to work around conflicts in technology
3. Other (Please explain.)
 - ✓ Be more flexible in working with counties. The roadblocks to solving complex problems are usually generated by UF not the county IT staff
 - ✓ In our county, the county buys the software and hardware and it is all maintained by UF
 - ✓ County has security issues w/state owned hardware. We have access to the county intranet with one dedicated computer.
 - ✓ Provide an IT support person to work w/County & UF/IFAS to understand all systems, rules, etc.
 - ✓ Independence from reliance on systems controlled by others.
 - ✓ Just recognize that the county is the one that is paying the bills & has standards that UF must abide by.
 - ✓ work with us when asked
 - ✓ Work with county staff to create uniform policy to permit connectivity to state Extension programs.
 - ✓ Provide more UF computers with equipped/right software capabilities
 - ✓ Provide additional training for IT that is supporting programs needed by UF/IFAS (ie. envelope manager)

Question 48. Please provide any additional comments you may have.

See full survey results.

Appendix F. Recommendations of the EDIS Subcommittee**Recommendations of the EDIS Subcommittee**

Members: Howard Beck, Diana Hagan (Chair), Dale McPherson, Ashley Wood, Petraq Papajorgji, Xiannong Xin, Millie Ferrer, Melanie Mercer

July, 2005

Background: For over 20 years, EDIS has evolved along with the technology for electronic information dissemination. Every 5 years or so, EDIS undergoes a major upgrade to core facilities and enhancements with new technology. This summary report identifies several areas and strategic plans to pursue for EDIS in the next 5 years. Many of the recommendations below can be implemented immediately (within the next year), others address directions and scope for the project.

Scope: The initial vision for EDIS was that EDIS would be a vehicle for disseminating extension information in the format of specific (tailored) recommendations, diagnosis, and decision support tools. Since the mid-1990's, EDIS has become primarily a vehicle for delivery of extension publications. IFAS has benefited from the use of the EDIS system for publications in many ways. Print copies of Fact Sheets, Circulars, and Bulletins have been made available to county offices on demand, resulting in tremendous cost savings. At the same time these exact same publications have been made freely available on the Web, expanding not only the sheer number of clients reached by our publications, but also the ease by which they can be discovered and obtained. Regular review and revision of our publications has been facilitated by their management in a single centralized database.

With activities in many other areas underway, it is appropriate to reevaluate the role of EDIS in light of that initial vision, a changing technological environment, and the successes attributable to EDIS over the years. It is recommended that EDIS expand to cover additional Extension functions, in particular better support for county extension offices including newsletters, a calendar of events, and customer ID and support, as well as formats other than (but in addition to) traditional extension publications including multimedia, expert systems, predictive models, calculations, and other decision support tools. The addition of a trained librarian to the EDIS staff encourages development in the area of controlled vocabulary and ongoing enhancements in information discovery and retrieval.

The emergence of XML (Extensible Markup Language) is transforming the Internet by making it easier for collaborating groups to exchange information. EDIS, which incorporated XML technology several years ago, will continue to expand and pioneer the use of XML.

In particular, the emergence of eXtension provides an opportunity for IFAS to participate in a national extension information network. EDIS, though specially tailored to IFAS' local needs, can exchange information in XML formats directly compatible with eXtension. We should explore pursuing partnerships between EDIS and eXtension

including taking a leading role in developing and applying XML standards for data exchange.

All software development associated with EDIS will be developed in accordance with industry standard practices and procedures, and will be published according to guidelines defined by the Open Source Initiative. EDIS source code will be archived within a secure code repository, including standard documentation (for example, Java source files and JavaDoc), so that any reasonably proficient programmer can maintain or modify the source code.

Specific Areas for Development:

Information Discovery and Retrieval: The greatest ongoing challenge for EDIS is to improve the experience of our clientele in finding the information they need. This function is currently served by a full-text search engine and a navigable network of topic pages. While we need to continue to enhance and support these existing searching tools, we propose to focus our development efforts on expanding on the progress we have made in developing and applying an IFAS-specific controlled topic vocabulary. There has been a great deal of progress in the last several years in the development of the Semantic Web (<http://www.w3.org/2001/sw/>). New technologies arising to give web-based information well-defined meaning (ontology) permit people and computer systems to work more effectively together. Tangible benefits to IFAS for adopting this technology include: better support for multilingual information, improved searching and retrieval, and interoperability with other Web services. We propose applying these principals to our controlled vocabulary and expanding the resulting topic system across IFAS to other collections of information. This will provide a vast “site map” containing thousands of concepts as they are defined and used by IFAS. XML standards such as RDF (Resource Description Framework) and OWL (Web Ontology Language) will be used for coding of concepts and relationships.

System Stability/Reliability. Migration to a new server over the next several months will increase performance and reliability of the EDIS system. In the long run, it would be desirable to purchase additional servers to spread the work load over several machines in order to further optimize performance.

Authoring Tools. EDIS pioneered some of the first successful tools for authoring (EDIS Editor), which make it easier for extension specialists to directly build their information into a database. These original tools were designed as stand-alone desktop applications to address the needs of poorly-connected remote users, who might need to use the tools without access to the central database. With the problem of connectivity largely resolved, it is possible to take advantage of several new Web-based tools including text editors, table editors, equation editors, rule editors, topic map editors, and graphic tools. These have been developed in recent years through grant-funded projects, and should be incorporated into EDIS. Furthermore, utilization of XML technology within these authoring tools enable exchange of information between different authoring tools including for example (eventually) Microsoft Word and other MS Office products. It is recommended that we continue to explore the possibility of developing extensions or

templates for Microsoft products that will provide an interface from these popular products to EDIS.

Database Management. An object-oriented database system provides content management for EDIS. EDIS is based on object database management systems (ODBMS) technology because such databases provide better organization for complex data structures (such as documents and other forms of content) and because of their ability to automatically classify information within naturally formed topic categories. With the advance of the semantic web, OWL (Web Ontology Language) has emerged as a W3 standard. The EDIS database management system needs to be upgraded to full compatibility with the OWL language. The existing ODBMS (ObjectStore) should be phased out and replaced by a storage management system optimized for OWL.

EDIS Print-on-Demand and Formatted Output. One feature of EDIS that makes it unique is the relationship between our web-based information and print publications. EDIS is currently the only system in the country capable of generating all state extension publications in XML format. To take fuller advantage of this capability, we propose to use XML style sheet language (XSL) to permit many kinds of products of the content in EDIS publications. Content can be automatically reformatted for a wide range of presentation styles. For example, we have successfully utilized XML printing technology (RenderX software) to offer a new way to format EDIS publications for printing. This technique needs to be expanded to allow more variety of print formats, Web presentations, and additional repurposing of the same content.

EDIS Web Services and XML. EDIS should become a Web Service-based information source that can integrate EDIS information with other IFAS information systems and with national eXtension. We are communicating closely with the eXtension technology group, primarily on development of XML standards for exchange of extension information. As eXtension develops, EDIS can utilize these standards for the free flow of information between EDIS and eXtension. We propose an approach to integrating multiple information sources within IFAS through the use of Web Services and XML. The topic map and information cataloging facilities of EDIS could be expanded to support IFAS-wide information management.

Syndication: We currently communicate information to subscribers via the EDIS New Publications email. We propose to provide XML feeds of EDIS content so that clients can subscribe for customized notifications, such as all new publications by a specific author, or covering a specific topic. By providing XML feeds we can also provide dynamic information about EDIS publications to non-EDIS IFAS websites.

Decision Support Tools. A good example of a system for delivering extension information in non-traditional formats is the DISC project (Decision Information System for Citrus). DISC utilizes expert systems, statistical models, record keeping software, and hand-held computers to deliver extension recommendations directly to citrus production managers working out in the groves. Such technologies need to be expanded and applied to other crops.

Workflow (ERS). The EDIS Routing System (ERS) successfully tracks documents from authors through the review process, through release and deployment. Workflow tools are needed to better manage this process and provide greater flexibility in creating/modifying the pathways through which documents must travel for review and approval.

Library MARC/Archiving. We must work with the UF Library to provide MARC-encoded metadata records for EDIS publications that can be added to the UF Library catalog (and others). The process of automatically generating MARC records from EDIS was first demonstrated several years ago. Additional work is needed to streamline this process, and make EDIS metadata information available in many formats, including eXtension's metadata standard. Related to this is the need to work with UF Libraries to put archived EDIS publications in a format consistent with other library archiving initiatives.

Recommendations for EDIS Organization

IFAS Innovative Applications Group. To reflect and support the ongoing innovation in IFAS software development, characterized by EDIS as well as DDIS and FAWN, we propose to reorganize the existing IT Programs Software group to form a group with the mission specifically to develop innovative applications to support IFAS programs and extension audiences. The emphasis of this group will include:

- **Applied research.** The group will identify trends in computer science and technology that are relevant to IFAS' mission and will develop innovative software applications based on the most promising new technologies.
- **Implementation and Deployment.** Provide service to county agents and Extension clientele (service provided with assistance of existing IT Help desk).
- **Teaching** Conducting academic teaching and training on new technologies, publishing in scholarly journals, attending regional, national, and international conferences, being a national leader in this area.
- **Pursuing Grant Funding for IT projects.** Examples of existing, funded projects that could be included in this group are the Southern Plant Diagnostics Network (SPDN), Crop Biosecurity Curriculum project, Decision Information Systems for Citrus (DISC), Trees Expert System, and the NUMAPS BMP simulation environment.

Innovation Advisory Committee: Activities of the group should be governed by a group similar to ITPAC in makeup, with a chair nominated by the group's members.

Application Focus Groups: Groups including county agents, extension specialists and one or two district directors should be formed to work directly with application development teams to identify priority areas, participate in setting priorities and in evaluation and testing software applications and information resources.

Personnel-Librarian: The EDIS Librarian position (currently Diana Hagan) should be enhanced with support staff sufficient to provide information services for a wider range of IFAS information. (e.g., UNIFAS publications, Presentations Database, Newsletters)

Personnel-Technology R&D: It is recommended that two graduate students under the direction of the current EDIS R&D director (currently Howard Beck) be utilized for program development on EDIS. Two graduate students working ½ time each would cost approximately \$23,000 each per year (includes tuition).

Hardware: Three year lease for three additional servers, \$15,000

Appendix G. Top 9 Land Grant AAU -Basic External Analysis

1997 Infostructure Task Force Report Update Team

Executive Summary

A basic external analysis of the Top 9 Land Grant Association of American Universities Information Technology units was performed by the 1997 Infostructure Task Force Report Update Team. The analysis commenced on August 10th, 2005. Due to the short amount of time for a complete analysis and a lack of available online data, North Carolina State was ruled out as candidates for analysis.

After a few weeks of research and analysis the team found the following results:

- 67% had centralized IT managed by a Director that included divisions for network and telecommunications, data management, classroom or educational technology services, application development, policy or planning, and training and support
- 44% had a five year strategy that included goals, indicators for performance, values and principles and objectives or initiatives

Please see [external file] for detailed organizational charts for each of the Top 9 Land Grant AAU.

What Land Grant Association of American Universities were used in this analysis?

- Iowa State University
- Michigan State University
- Ohio State University, Columbus
- Penn State, University Park
- Texas A&M University, College Station
- University of California, Davis
- University of Illinois, Urbana-Champaign
- University of Minnesota
- University of Wisconsin

Data Source

National AAU Peer Benchmarking for Quality
<http://www.ir.ufl.edu/compare/als-ifas0203.pdf>

Top 9 Land Grant AAU Profile

Manager Title	Percentage
CIO	22.22%
Director	33.33%
Associate Provost	11.11%
Interim	22.22%
Vice Provost	33.33%

Strategy Duration	Percentage
5	44.44%
4	11.11%
3	11.11%
2	11.11%
1	11.11%
Infinite	11.11%

Organizational Structure	Percentage
Centralized	66.67%
Decentralized	33.33%

Common Divisions or Departments	Percentage
IT Operations	62.50%
Network / Telecommunications	75.00%
Data Center	75.00%
Video / Media	25.00%
Application Development	62.50%
Classroom / Educational	75.00%
Policy / Planning	62.50%
Communications / Marketing	37.50%
Training and Support	62.50%

Conclusion & Recommendations

After the brief external analysis it was found that there is a great diversity of organization and operation in Land Grant Universities. A majority of those universities exhibited a centralized structure of operation managed by a director, utilized a five year strategy and had lower units with major emphasis on network, telecommunications, data management and classroom support.

While the results display a theme for centralization it should be disclosed to the reader that this analysis was brief and can only show a glimpse of what it really takes to run an Information Technology unit in a top tier Land Grant institution. These results were not confirmed with the universities, so they should be taken subjectively at this point in time.

Recommendations

- Further investigate the concept of centralization with a better analysis of the costs, benefits and true operational nature of the top tier Land Grant Association of American Universities.

External Analysis Team Members

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Appendix H. IFAS Interactive Video Priorities December 2005

Summary of Priority Interactive Video Equipment

1. McCarty 1031a new equipment and installation = \$ 31,650
2. Department/REC/County/Conference sites, each site at \$14,550 or \$19,050,
41 sites = \$ 610,050
3. District Extension Director site upgrade \$13,250, three sites = \$ 39,750
4. IT Conference Room upgrade = \$ 9,000
5. **Total = \$ 690,450**

1. New Equipment is recommended in McCarty 1031a at a cost of \$19,650.

* It is recommended that we move the current Polycom FX unit into 1031b and add system below to 1031a.

1	8800 series, with a software bridge of 6 ports and connections for laptops and other video sources	\$18,000
1	Powercam AUXILIARY CAMERA	\$1,800
	2 ceiling mounted LCD projectors, and two electric screens on the west wall.	
	Install a 5.1 Surround Sound system, and multiple microphones.	
	Install a controller for all the electronics, and a custom patch plate for one-touch control of most of the systems.	
	VSX7000 CEIL MIC ARRAY-INCL VSX MIC ARRAY	\$ 9,350
1	ELMO Visual Presenter	\$2,500
		\$31,650

2. Department/REC/County/Conference sites – each site at \$14,550 or \$19,050, 41 sites = \$ 610,050. Current sites located at: <http://video.ifas.ufl.edu/Sites.htm>

Of the **REC locations** four need interactive video equipment all other units have some Polycom presence Vero Beach*, Jay, Suwannee and Hastings. **Vero Beach** is a priority for teaching courses this fall.

Of the **Departments** seven need interactive video equipment all other units have some Polycom presence. Family, Youth and Community Sciences, Fisheries and Aquatic Sciences, Food Science and Human Nutrition, Forest Resources and Conservation, School of Soil and Water Science, Veterinary Medicine and Wildlife Ecology and Conservation.

Of the 67 **County Extension Offices**, 30 have capacity to implement interactive video. **Many of these county offices are willing to pay for the added bandwidth needed for interactive video.** Most all of our current county sites (16 of 67) have the first generation low-end equipment, which is not H .264 compliant, this makes transmission minimal for administrative and planning meetings but not acceptable or reliable for distance non-formal education. There are numerous new sites that do have bandwidth but no equipment. The more sites completed, the more money we save on

travel for in-service, program planning, program delivery by specialists driving from Gainesville and most important of all a shorter distance for clientele to travel to attend non-formal Extension education and formal education from CALS.

1	VSX7000S	\$5,800
1	PEOPLE+CONTENT VSX7000 SERIES	\$1,400
2	VSX7000 CEIL MIC ARRAY-INCL VSX MIC ARRAY	\$1,800
1	Portable Projector 2000 ANSI SVGA	\$1,800
1	ELMO Visual Presenter	\$1,600
1	32" LCD TV	\$1500
1	TV Cart	\$650
1	QoS Router* For the 3 REC sites	\$4500
		\$14,550

4. District Extension Director site upgrade = \$39,750

Quincy NFREC, Bell Glade, Immokalee

The District Directors located off campus utilize interactive video daily for district program planning, district faculty meetings, legislative sessions and remote administrative meetings. The current units purchased three years ago are nearing uncertain repair and are not H. 264 compliant. The current units would be moved to a low bandwidth county site and used for administrative and program planning meetings.

1	VSX7000S	\$5,800
1	PEOPLE+CONTENT VSX7000 SERIES	\$1,400
1	VSX7000E MPPLUS MULTIPOINT Software	\$2,300
1	ELMO Visual Presenter	\$1,600
1	TV	\$1,500
1	TV Cart	\$650
		\$13,250

5. IT Conference room upgrade = \$9,000

With the replacement in the IT conference room, IT could assist in providing a loner unit to campus based sites where there is not a Polycom Unit and to provide training of the new model.

1	VSX7000S	\$5,300
1	PEOPLE+CONTENT VSX7000 SERIES	\$1,400
1	VSX7000E MPPLUS MULTIPOINT SFTWR	\$2,300
		\$9,000