

**SCHOOL OF OPTOMETRY
TECHNOLOGY STRATEGIC PLAN
2005-2009**

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Technology Committee Members

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INTRODUCTION

The use of electronic technologies at the Indiana University School of Optometry has long been guided by a series of strategic plans. The most recent strategic plan oversaw such developments as:

- improvement in student computer training, provided in group settings and one-on-one as required;
- infrastructure improvement, including major strides in network reliability, data storage capacity, and quantity and quality of hardware and software;
- improvement in quality and quantity of web-based information resources;
- implementation of a periodic hardware replacement program;
- introduction of mobile computing and improvement in remote computing;
- increase in technology support staff;
- enhancement of access to electronic resources for students and faculty—including electronic class notes, digital library reserves, electronic journals, etc;
- improvements in data security and hardware/software inventory and control;
- improvement of services to IECC and CECC and extension of electronic services to clinics in Mexico and Carmel.

Most of these achievements would not have been possible without the university's overarching technology infrastructure and generally enlightened technology leadership. Nonetheless, there remain some goals and objectives from the previous plan that were not achieved due to various factors, not the least being that critical mass had not yet developed to the point where they became either necessary, inevitable, or perhaps even desirable. Such goals are carried over into this plan, not out of confidence that conditions necessarily will be right for them to be achieved over the next several years, but because of the intrinsic merits of the goals themselves.

Technology at the Indiana University School of Optometry supports and enhances the teaching, learning, research, patient care, and service missions of the School. It grows increasingly integrated throughout the School environment as time passes, and its proper care and upkeep become increasingly critical. In creating this plan to guide the development and growth of technology the following values have been observed:

- the teaching, research, patient care, and service activities of the School will continue to become increasingly dependent on electronic technologies;
- electronic technologies enhance both the School's influence and the productivity of its personnel;
- emerging issues such as security, privacy, and protection of intellectual property will require ever-increasing resources;
- redundancy, disaster planning, data backup, and improved "user-friendliness" are essential;
- national and international standards should be embraced;
- off-the-shelf hardware and software are preferable to home-grown;
- modular and extensible technologies are to be preferred;

- standardization is desirable insofar as possible but the School's tradition of flexibility in support for various hardware and software solutions should continue;
- technology resources should be provided in a seamless and ergonomically appropriate environment.
- technology is a supporting instrument for attaining the School's mission and is not an end in itself.

Both the School's current strategic plan and the UITS strategic plan (which actually expired in 2003) were closely considered during the writing of this strategic plan in order to be compatible with those two documents.

Mission of the School of Optometry:

The mission of the Indiana University School of Optometry is to protect, advance, and promote the vision, eye care, and health of people worldwide by

- preparing individuals for careers in optometry, the ophthalmic industry, and vision science and
- advancing knowledge through teaching, research, and service.

This will be accomplished through the Doctor of Optometry, Optician/Technician, Residency and Graduate programs.

The mission of the School's technology program and resources is to support the students, staff, and faculty of the School in attaining the School's mission.

Vision of the School's Technology Program:

To expand the scope and improve the effectiveness of optometric education, clinical care, research and service by harnessing the power of emerging electronic technologies.

Goals and Objectives

GOAL I. Maintain and continue to improve a robust technology infrastructure for the School's faculty, staff, and students.

Objectives:

1. Keep network resources and workstations up to date with the latest software releases (especially Microsoft security patches) and continue to follow UITS-recommended practices.
2. Keep current with new and forthcoming advances in technology.
3. Provide all faculty and staff with modern software and equipment tailored to meet their specific interests and responsibilities, including support for teaching, research, and service.

4. Continue periodic replacement of workstations, servers, and printers in accordance with life-cycle funding.
5. Continue to support both PC and Mac platforms.
6. Ensure pervasive connectivity in the Atwater Building. Wireless reception must be excellent throughout the building. Consider installing wireless networks in the School's other clinic locations.
7. Resolve the issue of faculty and staff data storage needs.
8. Replace desktop workstations in the computer cluster and in the library, unless a decision to require student laptops makes such a move unnecessary. Student workstations that are retained should be replaced on a periodic basis. (The UITS life-cycle replacement program does not apply to student-used computers.)
9. Investigate centralized "push" technology for upgrading workstations.
10. Ensure that the latest versions of software are available in communal computer facilities.
11. Provide convenient, reliable, and secure access to instructional material from both on and off-campus.
12. Investigate strategies for getting instructional technology installed in room 107 in the Atwater Building.
13. Insofar as possible, adhere to the forthcoming ASCO Informatics Special Interest Group's "Informatics Standards for Schools and Colleges of Optometry." A draft of this document appears at this URL:
http://optometry.berkeley.edu/~library/InformaticsStandards12_2004.doc

GOAL II. Continue to provide technology support for faculty, staff, and students.

Objectives:

1. Provide consistent and high-quality technology support across all School locations.
2. Provide accurate and timely consultation as needed, on a one-on-one basis if possible.
3. Complete the move of the technology staff and software development lab to room 529.
4. 54% of entering first-year students either own a laptop or plan to purchase one during this academic year. This number is expected to grow, and virtually all of them require initial and frequent support. Assess the impact of this additional workload on technology staff. Assess the impact of requiring a particular laptop

- package in order to minimize support demands and decrease the amount of paper used and processed by faculty and students as well as the accompanying cost.
5. Support ongoing opportunities for technology-related professional development and training for technology staff.

GOAL III. Provide excellent security for the School's electronic resources.

Objectives:

1. Provide reliable and secure access to data and networks and protection of data from damage, attack, or loss for all faculty, staff, and students.
2. Maintain a RAID level on network resources that strikes a safe and reasonable balance between security, economy, and data integrity.
3. Eliminate security holes. Disable direct dial-in capability to the School's servers.
4. Continue to meet all directives of university security audits.
5. Review and revise the technology disaster recovery plan.
6. Continue to maintain an accurate and up-to-date inventory of computer resources.
7. Protect intellectual property. Eliminate any occurrences of software piracy as they may be encountered.
8. Encourage frequent workstation backups, password changes, and antivirus updates.
9. Investigate strategies for backing up computerized clinical equipment.

GOAL IV. Improve Access to scientific information.

Objectives:

1. Continue to provide intensive, on-demand information services to students, staff, and faculty, with emphasis on electronic sources of information—journals, databases, etc.
2. Expand such services as electronic reserves and electronic class notes.
3. Investigate the faculty proposal to digitize the entire curriculum and place it on CD or DVD for student convenience.
4. Emphasize the principal of “information on demand” for all School personnel. Instructional and scientific information should be available regardless of time or place.

V. GOAL V. To improve and expand the present course offerings by utilizing modern technology

Objectives:

1. Promote integration of technology throughout the curricula in innovative and effective ways to enhance teaching and learning.
2. Consider requiring students to own and use laptop computers.
3. Continue to provide basic training in the use of computers to optometry students so that they are better able to utilize presently available resources.
4. Pursue the establishment of faculty fellowships and incentives to encourage development of computer instructional applications.
5. Seek external funding and allocate school funds to support the technological developments needed for the optometric curriculum.

GOAL VI. To leverage faculty expertise for the purpose of remote consultation with and for education of the larger optometric community

Objectives:

1. Increase the use of videoconferencing as a means of conserving resources and encouraging telemedicine.
2. Obtain videoconferencing equipment for all of the School's locations, including the clinic in Mexico. Provide a robust infrastructure and digital camera system for the clinic in Mexico. Consider the use of such equipment in the rural outreach clinics.
3. Encourage faculty to use the School's webmaster to design and utilize electronic instructional modules for student instruction and continuing education.
4. Use emerging technologies to deliver coursework and programs to students learning at a distance. Provide a technology-rich environment that will spawn innovative and progressive approaches to instruction.
5. In conjunction with the Continuing Education Committee develop an aggressive plan for CE offerings. Survey the optometrists within the tri-state area for their CE needs. Each specialty area should develop a long range plan for CE that would include topics, lecturers, audience, schedules, and budgets. An overall school plan should emerge from the individual specialty plans.
6. Faculty responsibilities and compensation should be clearly defined. Identify a faculty member and administrative support personnel who will be responsible for the development of the plan and its implementation. Establish short term and long term goals and outcome measures that will provide continuous feedback.

7. Develop a CE plan based on electronic delivery. Survey the community of optometrist within the tri-state area to gauge the level of computer literacy and evaluate the demand for electronic CE. Develop multi-media programs to serve at various levels.
8. Prepare optometric community for the tools that will be used for distance learning. Prepare and offer programs that will raise the level of computer literacy within the profession.
10. Continue to encourage faculty to convert current course material into electronic form. This can be done by providing time and support to convert their current optometry and CE courses.
10. Utilize information technology such as that available on the internet. The World Wide Web offers unique opportunities to interact with practitioners who may wish to consult with faculty.

Goal VII. To develop a patient data base for instruction, research, and administration

Objectives:

1. Ensure that any existing professional standards for data input and exchange are followed in the implementation of the clinic management systems.
2. Support the development of electronic patient records in all School clinics.
3. Evaluate the program on a continuing basis to ensure that it meets the School's needs.

Goal VIII. To establish the School as a "Vision and Eye Care" information resource on the internet for purposes of education, research, and promoting public health.

Objectives:

1. Review all of the School's web pages to ensure consistency and to take advantage of new developments in web design.
2. Support and utilize a "point of presence" on the internet using state-of-the art technology (e.g. World Wide Web information server).
3. Develop, deploy, and publicize information services on the internet which will provide opportunities for learning at all levels (K-12, university, professional, public) about vision and eye care (e.g. "Ask the Optometrist" forum; electronic library; knowledge-base on eye care).
4. Support the electronic publication of current research in optometry and vision science at IU.

Goal IX. To provide electronic tools for accessing data necessary for efficient performance of administrative functions.

Administrative functions require an effective information infrastructure. The School of Optometry should review and improve the methods by which information is collected, stored, and retrieved. The elements in this effort should include: introduction of systems that are fully compatible with university payroll, personnel, accounting, and donor record systems; adoption of the latest office, communications, and reporting technology; and identification of other requirements and implementation of appropriate technological strategies to meet them.

Objectives:

1. Appoint a task force, individual, or consultant to evaluate the School's administrative information requirements. Consult with administrators, faculty, staff, students, and external agencies as appropriate. Develop detailed plans to address the needs. Set reasonable timelines for completion of the project in stages. Develop financial support and staff commitment as appropriate.
2. Assign responsibility for carrying out these plans to appropriate individual or team.
3. Develop or identify and purchase systems that will meet the needs identified in step 1. Obtain the necessary equipment.
4. Develop and implement training programs for personnel in order to ensure integrity and security of the data as well as efficient workflows and through-put.
5. Gradually re-evaluate the job descriptions of all staff positions to realistically portray the integration of computer technology into actual job responsibilities.

Goal X. To provide or assist in identifying electronic tools necessary for efficient performance of both clinical and basic science research.

Present-day vision research relies heavily on electronic tools for experimental design, control of laboratory equipment and visual stimuli, mathematical calculations and modeling, statistics, graphing, and visualization, and the design of and entry into databases. The School needs to continually assess the types of electronic tools necessary for state-of-the-art research in all areas carried out in the School, to provide general purpose tools (such as statistics packages, spreadsheets, charting, and graphing programs, etc.) that can be used by a number of faculty, students, and staff, and to provide assistance to individual faculty and students who need to find or develop specialized technology tools to implement their research goals.

Objectives:

1. Continue to provide technology aid and advice to junior or new faculty members who are setting up research laboratories, in order for the School to remain competitive in attracting and retaining the best candidates.

2. Continue to provide technical advice and assistance to faculty and students on obtaining off-the-shelf or custom-constructed electronic hardware that would make possible increasingly sophisticated experimental designs, especially as this hardware would be related to interfacing with computers and other technical infrastructure that is already in place.