



Instructional Computing Technology Committee (ICTC)

Academic Program Planning and Review Recommendations (APP&R) 2005–2006

To: Dave Gift, Vice Provost of Libraries, Computing and Technology

From: Instructional Computing Technology Committee (ICTC)
Danielle Nicole DeVoss, Chair

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INTRODUCTION

The following 2005–2006 APP&R document was prepared by the Instructional Computing and Technology Committee (ICTC) for David Gift, Vice Provost of Libraries, Computing and Technology.

Active members of ICTC include: **Phil Barrie** (Broadcast Services); **Byron Brown** (LCT; Economics); **Tom Davis** (Computer Labs/ACNS); **Danielle Nicole DeVoss** (Writing, Rhetoric, and American Cultures); **Pat Dickson** (Educational Psychology and Special Education); **Paul Freddolino** (Social Work, Social Science); **Dennie Hoopingarner** (Center for Language Education And Research; Language Learning Center); **Ranti Junus** (Libraries); **Helen Keefe** (Division of Science and Mathematics Education); **Gerd Kortemeyer** (Natural Sciences; Instructional Technology in Education); **Patricia Lambert** (College of Nursing); **Kathy Lovell** (Human Medicine); **Raman Padmanabhan** (Computer Labs); **Joan Predko** (VUDAT, IMC); **Kris Schuette** (Registrar's Office); **Jo Smith** (Computer Science and Engineering); **Cheri Speier** (Accounting and Information Systems, Eli Broad College of Business); **Frank Tate** (Instructional Media Center); **Rich Tibbals** (Communication Arts and Sciences).

In preparing this year's report, ICTC took a different direction than in previous years; that is, the Committee has not prepared and included specific budget ratings and rankings. Rather, we have focused on articulating a set of instructional technology recommendations, and made mention of the specific LCT TLE requests in the context of these recommendations. (Please note that the absence of a specific request does not mean that ICTC disapproves of that request; rather, we considered requests not directly related to instructional technology outside of our Committee purview and have not addressed them.)

Throughout the recommendations, the Committee has drawn upon data collected through the Fall 2004 ICTC Faculty Instructional Technology Survey. The survey was created and conducted by ICTC, with the support of the office of the Vice Provost of Libraries, Computing and Technology. A survey invitation was distributed to a sample of 1,010 individuals; in addition, several colleges (i.e., Education, Nursing, Osteopathic Medicine, Social Sciences) distributed the survey invitation to all of their faculty. A total of 147 respondents completed the survey.

PRIORITY RECOMMENDATIONS

Framing this entire document are five priority recommendations:

1. That the \$10.4 million Teaching, Learning, and Education (TLE) funds be protected during these admittedly tight budget times. As the University's instructional technology needs change and increase with emergent technologies, it is crucial that these funds be available. The TLE funds provide crucial support for MSU to stay current within the changing landscape of instructional technology.
2. That faculty training and support are key to enacting any future instructional technology goals and to supporting existing faculty initiatives. We acknowledge the difficulty and complexity of providing training and support, but we also believe that it

is part of the purview of the office of the Vice Provost for Libraries, Computing and Technology to take an active role in faculty training and support initiatives.

3. That communication of instructional technology-related events, opportunities, and changes is crucial to fostering a healthy ecology of technology use on campus. The Committee recognizes the support of such robust systems as help.msu.edu, computing.msu.edu, the MSU Computer Help Desk, and other communication and support components on campus. The Committee also feels that a sustained technology infrastructure requires further modes of communicating instructional technology initiatives, best practices, and issues.
4. That in all aspects of the use of TLE funds in the maintenance and improvement of University technology infrastructure, the Office of the Vice Provost for Libraries, Computing and Technology should support the collection and utilization of appropriate data from major user communities. This data should guide the development of short- and long-term plans and the implementation of such plans.
5. That Section 508 of the 1998 Rehabilitation Act, requiring that Federal agencies' electronic and information technology be accessible to people with disabilities, be adopted and enacted in all instructional technology spaces at Michigan State University. Issues of accessibility and usability should be attended to when supporting, funding, and sustaining instructional technology spaces—physical and virtual. Accessibility and usability should be benchmark considerations for instructional technologies.

Each of these five overarching recommendations are addressed or at the very least considered in the recommendations below.

RECOMMENDATIONS

DESIGN AND INFRASTRUCTURE OF INSTRUCTIONAL TECHNOLOGY SPACES

Teaching with technology at MSU takes place in multiple settings, including formal and informal spaces, and physical and virtual environments; MSU must continue to strive for improvement in its diverse teaching spaces.

The design of learning spaces—whether a classroom, a laboratory, a library, or an informal learning space—can enhance learning. Excellent learning space design can improve learning outcomes. The converse is also true; poor design can impede learning and restrict teacher and learner options. Learning spaces have morphed as educators have integrated communication, collaboration, and computing functionalities. Educators, technologists, and space planners are combining technology, pedagogy, learning, and physical space to create new learning environments.

The design of learning spaces continues to receive national attention in higher education. For example, the National Learning Infrastructure Initiative (NLII) of Educause held a 2-day focus session on *Learning Space Design for the 21st Century* (September 9–10, 2004, at MIT and attended by Joan Predko, Patrick Dickson, Byron Brown, and Barbara Kranz from MSU). The purpose of the focus session was to explore learning space design principles as a way to enhance and transform teaching and learning with technology and to make it possible for faculty and students to engage in active technology-mediated learning (a summary of the outcomes can be found at <http://www.educause.edu/ir/library/pdf/NLI0447.pdf>).

Learning spaces was also a key component at the NLII annual meeting on January 23–25, 2005 in New Orleans (attended by Theresa Bernardo, Joanne Keith, Mark Urban-Lurain, Patrick Dickson, Byron Brown, and Joan Predko from MSU). Sessions revealed the ways in which different institutions are addressing instructional technology learning spaces and preparing for a future in which instructional technology within and across physical and virtual spaces will be a key component of all learning.

Technology Classrooms

As of spring 2005, 200 of MSU's 350 classrooms are technology equipped (i.e., with technology carts or laptop podiums). The Registrar's Office reports that scheduling requests for technology classrooms continues to increase; ACNS reports that there are a growing number of logins for most of the technology classroom computer stations, indicating increasing use. Difficulty in scheduling technology classrooms was one of the most significant struggles identified by respondents in the ICTC Faculty Instructional Technology Survey; demand for technology classrooms currently outpaces the availability of the classrooms.

ICTC thus supports the VPLCT LCT TLE funding requests for:

- New Technology Classrooms
- Upgrade (replace) technology classroom projectors, equipment

ICTC supports the IMC LCT TLE funding requests for:

- 10 Laptop Computers
- 10 XGA-high resolution document imagers
- 30 Crestron Control Systems

The Committee also recommends the following actions in regard to technology classrooms:

Recommendation 1: The commitment to technology classrooms should continue; MSU should continue to upgrade classrooms with limited or no technology to technology classrooms. Further, MSU should continue to maintain and/or replace outdated or non-working equipment in the technology classrooms.

Recommendation 2: Technology classrooms are regularly assessed regarding faculty need and instructional use; this is especially important as more classrooms support laptop use, wireless capabilities, and changed pedagogical approaches based on these uses and capabilities. Continued assessment approaches should engage all stakeholders and technology classroom users; such assessment should guide the instructional technology decisions for specific rooms (e.g., whether a laptop podium or computer cart is installed).

Computer Labs

The University maintains approximately 50 public computer laboratories; these labs have—and will continue to have, even in the face of rapidly developing communications and computer technologies—an important impact on how instructors teach their classes and what technology-based learning students acquire during their time at MSU.

As technology evolves, so does pedagogy, and much teaching is currently guided by active-learning principles, which are also emphasized in the University's "Guiding Principles." Active-learning approaches often encourage group problem-solving approaches and collaborative work. However, the current design paradigm for most of the University's computer labs does not facilitate the collaborative student work valued in many courses.

Specifically, most of the computer labs are arranged in rows; students cannot easily move around the rooms, and in many laboratories the rows are spaced so closely together that students are not able to work in groups. The row-oriented design also emphasizes a lecture-based, professor-dominating-from-the-front-of-the-room environment.

Further, technology trends in the United States indicate that laptop and wireless use will continue to grow over the coming years. It is important, however, that as we adopt more mobile computing practices we also maintain the wired infrastructure that the University has developed.

ICTC thus supports the ACNS LCT TLE funding requests for:

- Microlabs/Upgrades
- Microlabs/Software Renewals/Upgrades
- Microlabs/SoftGrid Application Server

The Committee also recommends the following actions in regard to computer labs:

Recommendation 3: As new computer labs are added or existing laboratories are renovated, different lab designs should be reviewed, considered, and implemented—including “pod and cluster” layouts.

Recommendation 4: The redesign of labs must be driven by the instructional uses of the space. Example institutions that have actively engaged students, faculty, and other stakeholders in the design of technology-rich instructional spaces include Stanford, the University of Arizona, and MIT.

Recommendation 5: Several computer labs are capable of accommodating student laptop use (e.g., Bessey 214 and 317, 26 Student Services). Space for laptop use will become increasingly important as students choose to bring laptops to MSU and to the classes held in computer labs.

Collaborative Student Work Spaces

Because online and hybrid courses often change instructional dynamics and students' physical access to one another and to their instructor, innovative methods of student support should be developed, such as the Lyman Briggs Collaborative Learning Lab (<http://www.lite.msu.edu/kortemeyer/helproom/>) and the Writing Center's Digital Consultancy (<http://writing.msu.edu/about/digital.html>). Further, more physical spaces that facilitate collaborative, flexible, computer-mediated student work should be developed; ICTC thus recommends the following:

Recommendation 6: That computer labs underutilized for teaching (especially those in the Residence Halls) be converted to flexible, collaborative, student work environments. Robust computers; comfortable, flexible, moveable furniture; wireless access; and whiteboards should all be considered for installation in these spaces. Further, student stakeholders should be engaged in the processes of planning and redesigning underutilized computer labs.

FACULTY TECHNOLOGY TRAINING

Technology training and support for faculty continues to be an important activity. Current efforts include the Libraries, Computing and Technology Training Program (LCTTP), the Libraries, Computing and Technology (LCT) Faculty Seminar series, and the Virtual University Design and Technology (VUDAT) Breakfast Seminar Series. ICTC thus recommends:

Recommendation 7: Libraries, Computing and Technology should continue its commitment to education and training to help faculty take advantage of existing and emerging technologies. Particular attention should be paid to increasing the number of and increasing funds for resources supporting peer-to-peer faculty support, including the Explorations in Instructional Technology Brown Bag and Breakfast Seminar Series, the faculty ANGEL user lunches, etc. Further, funding should be allocated to develop and conduct a faculty LON-CAPA user lunch event similar to the ANGEL user lunch.

Recommendation 8: ICTC supports VUDAT's budget request to develop a Technology Learning Assistant Program to train students to assist faculty through one-on-one ANGEL-use consultations. This program would augment the current LCTTP and VUDAT training and support and hopefully decrease the number of basic assistance calls to the LCT helpline; this increased support is especially crucial as ANGEL use continues to rise.

Recommendation 9: The office of the Vice Provost of Libraries, Computing and Technology should help to identify best practices at both local and University levels and to disseminate best practices information to all faculty and staff through a Libraries, Computing and Technology web site and through local (e.g., departmental, unit, College) instructional technology staff.

SUPPORT FOR THE INSTRUCTIONAL DESIGN OF HYBRID CLASSES

Hybrid classes—defined by the *Chronicle of Higher Education* as courses with some of the traditional/physical class meetings replaced by online sessions—can be an excellent use of physical space, faculty creativity and technology know-how, and electronic networks (<http://chronicle.com/free/v48/i28/28a03301.htm>). When integrated and implemented appropriately, hybrid classes can create a space for faculty to translate excellent teaching and information-delivery skills to online spaces, and to create student-directed, student-centered spaces for learning well-supplemented by classroom instruction.

ICTC thus supports the BCS LCT TLE funding request for:

- Upgrade Computers for SofTV Production
- Non-Linear Editing System
- Upgrade to 204 Communication Arts Building

ICTC supports University efforts to launch and support more hybrid classes, and makes the following recommendations regarding hybrid classes:

Recommendation 10: Efforts should be initiated to educate faculty about hybrid learning and to encourage faculty development of hybrid courses. Workshops, forums, and other campus-wide discussions are necessary to educate the University community regarding both the promises and drawbacks of hybrid learning. Such educational efforts will support faculty, departments, and units as they consider hybrid delivery.

Recommendation 11: Support should be provided for those faculty teaching courses that lend themselves well to hybrid delivery. Support might include, for instance, course-release time to develop a durable hybrid course.

Recommendation 12: ICTC recognizes the importance of platform standardization and supports University efforts toward further integration and continued support of ANGEL. At the same time, ICTC urges the University to recognize that a standard platform may not support the pedagogical needs of all faculty; faculty should thus have some flexibility in selecting and implementing alternative courseware (e.g. LON-CAPA) that provides capabilities lacking in the standard courseware platform. The Committee thus

recommends the continued centralized funding of LON-CAPA support staff at a minimum of the current level.

CAMPUS WIRELESS ENVIRONMENTS

There is an increasing call for the use of wireless technology in instructional settings, and planned approaches and deployment have been underway at the University over the past few years. As wireless demand continues to grow, it is crucial that access, security, and appropriate pedagogical use frame that growth.

Although a number of responses in the ICTC Faculty Instructional Technology Survey called attention to the need for wireless access at the University, wireless was not a major theme in responses from an instructional technology perspective. This may reflect that wireless access is trumped by the basic needs of faculty to have usable, available instructional technology in teaching spaces and the human support to create more effective learning environments. As wireless access becomes more common, however, more attention will no doubt need to be paid to the ways in which wireless access can facilitate and enhance instructional practices.

ICTC thus supports the ACNS LCT TLE funding requests for:

- Network/Wireless

ICTC also recommends the following actions in regard to wireless deployment on campus:

Recommendation 13: Support for wireless networking for instructional purposes should be considered by proposal basis. The office of the Vice Provost for Libraries, Computing and Technology should launch a clear initiative publicized to deans, chairs, and directors and calling for interested faculty, groups, or departments to submit specific proposals and rationale statements for wireless development for instructional uses.

Recommendation 14: As wireless access becomes more common across campus and as faculty develop innovative uses of wireless in conjunction with their instruction, the office of the Vice Provost for Libraries, Computing and Technology—in coordination with faculty training and support units on campus—should showcase innovative instructional uses of wireless and thus provide access to best practices information.

ACCESSIBILITY TO AND USABILITY OF INSTRUCTIONAL TECHNOLOGY

With the sustained work of the Resource Center for Persons with Disabilities (RCPD), the Writing in Digital Environments (WIDE) Research Center, and the Accommodating Technology CCSAC Subcommittee, and with the launch of the Usability Center on MSU's campus, accessibility and usability issues continue to be of primary importance in the University's adoption and use of instructional technology.

If not accessible and usable, instructional technology—including software, hardware, physical spaces, virtual spaces, and much more—fail to serve the needs of users. Thus, the Committee supports efforts to enhance the usability of and increase the accessibility of all physical and virtual instructional technology spaces on campus. Specifically, ICTC recommends:

Recommendation 15: That the LON-CAPA Accessibility and Usability Project be funded to better meet the needs of the almost 12,000 users of the system. LON-CAPA use at MSU has seen steady growth over the past years (<http://www.lon-capa.org/usage.html>). Given the particular strengths of LON-CAPA in science and math, an anticipated additional outcome of the accessibility study will be identified best practices in the

rendering of mathematical equations and graphs, which would be applicable beyond the initial LON-CAPA Accessibility and Usability Project.

Recommendation 16: That the office of the Vice Provost of Libraries, Technology and Computing play an active role in both emphasizing the importance of and supporting projects related to the accessibility and usability of the University's instructional technology spaces.

INSTRUCTIONAL TECHNOLOGY EVALUATION AND FEEDBACK

To evaluate the effectiveness of the University's instructional technology efforts, it is crucial to directly solicit student feedback. To meet this goal, during spring of 2003 and fall of 2004, ICTC invited representative groups of students to join the Committee and discuss their technology goals, concerns, and successes. These discussions with students were extremely valuable.

Along with focus group discussions with students, ICTC also created and conducted—with the support of the office of the Vice Provost of Libraries, Computing and Technology—the Faculty Instructional Technology Survey in Fall 2004. The results from the survey have been useful in guiding the Committee's 2004–2005 tasks and in drafting this document. ICTC thus recommends:

Recommendation 17: Libraries, Computing and Technology should consider adopting similar student-survey approaches and also extend ICTC's focus group approach by using larger, more systematic surveys from a broader base of MSU stakeholders.

IMAGINING INSTRUCTIONAL TECHNOLOGY AT MSU: A 5–10 YEAR PLAN

Scenario-based approaches have become a rigorous and thought-provoking method of idea generation for technology needs and issues. See, for example:

- Educause/NLII Next Generation CMS User Scenarios
<http://www.lon-capa.org/features.html>
- American Association of Law Libraries
Special Committee on the Future of Law Libraries in the Digital Age scenarios
<http://www.aallnet.org/committee/scenarios.asp>
- JISC Information Environment Architecture: Usage Scenarios
<http://www.ukoln.ac.uk/distributed-systems/jisc-ie/arch/scenarios/>
- Learning In the 21st Century: A Report on the Iowa Tech Scenarios Survey
<http://www.infoweb.state.ia.us/21/appendix/HEReport.pdf>

ICTC thus recommends:

Recommendation 18: That the office of the Vice Provost of Libraries, Computing and Technology appoint a committee to meet with small groups of students, faculty, and administrators in departments across the University during AY 2005–2006 to establish 5-year and 10-year instructional technology scenarios. Reports documenting the scenarios should be accessible via the web, and should be used as guiding documents for all of the CCSAC subcommittees. At least one representative from ICTC should be assigned to this committee.

GENERAL/MISCELLANEOUS ENDORSEMENTS

Most instructional technology at MSU relies upon the university's general computing facilities. These facilities must be maintained and updated in a timely manner to provide an adequate infrastructure for the use of instructional technology throughout the University.

ICTC thus supports the ACNS LCT TLE funding request for:

- Email/Larger mailbox quotas
- Storage/Xthos

The campus libraries are key technology access points for many students. The Main Library acts as perhaps the most widely accessible computer lab on campus. In addition, electronic resources are a key digital research space for students and faculty. Maintaining updated, accessible, wide-ranging electronic databases is crucial for MSU's intellectual infrastructure.

ICTC thus supports the LIBR LCT TLE funding requests for:

- Electronic Resources
- Public Computer Upgrades