Criterion Four: Acquisition, Discovery, and Application of Knowledge

The organization promotes a life of learning for its faculty, administration, staff, and students by fostering and supporting inquiry, creativity, practice, and social responsibility in ways consistent with its mission.

Introduction

The University strongly supports a life of learning for its faculty, administration, staff, students and the broader community. This is reflected in its core documents such as the mission, which calls on the University “to advance knowledge through excellence in learning, discovery, and engagement” and second core value, “Discovery, Learning, and Communication,” which calls on the institution to “vigorously pursue and widely share new knowledge; expand the understanding of existing knowledge; develop the knowledge, skills and competencies of students, faculty, staff and the community while promoting a culture of lifelong learning.”

It is also reflected in the University’s research and creative programs; the general education curricula aimed at preparing students to be creative, critical, and independent thinkers; certificate- and degree-specific programs of study; co- and extra-curricular activities; and professional development opportunities.

At the University, a life of learning takes a variety of forms, including:

- Discovery of new knowledge through research;
- Interpretation of the world and human experience anew through creative activity;
- Maintenance of professional competency in an environment of ever-increasing complexity;
- Development of new skills for a changing workplace and a changing world;
- Exposure to new and reinterpreted ideas and experiences to foster reflection and critical thinking; and
- The ability to acquire, discover, and apply knowledge in a responsible manner.

The actions of the board, administrators, students, faculty and staff that show a strong commitment, in policy and in practice, to fostering the life of learning.

The institution helps students to acquire the knowledge, skills, and experiences to be successful not only in their coursework, but more importantly, in life beyond time at the University, so that they can grow as professionals, citizens, and people. Numerous programs, curricula and other tools provide graduates with the intellectual versatility and breadth that will be valued more than ever in the 21st century and with skills to fill jobs that have yet to be created.

The University is committed to connected, engaged learning through support of research and creative activity at every level in the institution, from matriculation to post-graduation.

Because research and scholarship are essential components of the University’s mission, the institution provides exceptional facilities and infrastructure for research and creative activity.

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Increasingly, University constituents create new knowledge and carrying out creative activity through collaborative, interdisciplinary endeavors.

Faculty members, staff and students are recognized for their scholarly research and creative activity through awards, publicity and other accolades.

The University provides professional development and other kinds of opportunities that allow faculty and staff members to grow, to stay at the forefront of their respective disciplines, to be more productive, and to move in new directions.

With the explosive growth of new knowledge and access to information, the University teaches students information literacy skills that allow them to evaluate its worth and how to use it appropriately. Strong institutional policies and procedures ensure that people at the University discover and transmit new fundamental and basic science knowledge responsibly and ethically.

The University promotes lifelong learning and is on a quest to discover and define a truly new, engaged university. Fostering a life of learning has always been a part of UT’s history and culture, to empower the use of knowledge to change things for the better to partner with others and to actively create beneficial knowledge.

Core component 4a: The organization demonstrates, through the actions of its board, administrators, students, faculty and staff, that is values a life of learning.

The University of Toledo’s commitment to life of learning can be summarized by the importance of academic freedom at the University, both in policy and in practice; the support provided by the University such as funding, facilities, libraries and information technology; the support provided by external agencies and organizations; the establishment of focused areas of excellence; and the use of centers and institutes to connect research and creative work to the broader community. The University provides opportunities for professional development for faculty and staff and learning opportunities for the surrounding community. The importance of research and creative activity to the University is underscored by the use of faculty experts to explore and improve the University.

I. Academic freedom

Academic freedom is a cherished value at the University and vital to a life of learning and inquiry. The University protects the right and ability of faculty members to pursue inquiry and to express their views, uninhibited by politics or external pressures, in documents that have been approved by the board of trustees, including the constitution of the Faculty Senate, the collective bargaining agreement between the University and the University chapter of the American Association of University Professors (AAUP) and the rules and regulations for faculty not bound by a collective bargaining agreement.

Among the specific powers and responsibilities listed in Article II of the Faculty Senate Constitution are for the body “to protect faculty rights and privileges, equal opportunity, due process, and academic freedom, and to promote an exemplary standard of ethical conduct at the academic, professional and administrative levels.” (http://www.utoledo.edu/fac senate/)

Article 5 of the AAUP collective bargaining agreement embraces faculty freedom in conducting research and publishing results and in discussing controversial subjects in the classroom. At the Criterion Four Acquisition, Discovery, and Application of Knowledge Third draft of full HLC self-study report Aug. 22, 2011
same time, however, faculty members, according to the agreement, are expected to be accurate, exercise appropriate restraint, show respect for the opinion of others and make every effort to indicate that they are not speaking for the University.

Article 5 also embraces the concept of academic freedom for librarians who “shall be free to choose books and other materials and to provide services for the interest, information and enrichment of all members of the academic community.” Materials cannot be banned from University libraries because of the scientific, economic, social, political or religious views of their authors. (http://www.utaauap.com/docs/finaltenure.html#_Toc212433016)

The Health Science Campus rules and regulations call on faculty members to be responsible and accurate in speaking and writing, noting that they “should remember that the public may judge their profession and the institution by their public statements.” (http://www.utoledo.edu/depts/facaffairs/pdf/rules_regulations.pdf)

The University’s online Student Handbook also stresses the importance of university students learning and studying in an atmosphere of academic freedom. (http://www.utoledo.edu/studentaffairs/pdfs/handbook.pdf)

Freedom of expression is closely allied with freedom of inquiry, and the University campus regularly hosts public officials and candidates for public office.

- Hilary Rodham Clinton, Barack Obama, John Kerry and Ralph Nader all visited the campus and addressed both campus and community members during the 2008 presidential campaign.
- Candidates for both Congress and Senate regularly visit campus and engage students, faculty and the community.

The University also serves as a forum for the free expression of ideas and peaceful protest.

- Students protested layoffs in the Student Affairs Division in 2009 and in 2008 carried signs and voiced concerns about proposed changes in the former College of Arts and Sciences at a presidential “Town Hall” meeting.
  http://www.independentcollegian.com/news/students-protest-layoffs-1.1740351
  http://utnews.utoledo.edu/publish/News_2/President_voices_support_for_liberal_arts_welcomes_student_input.shtml
- Students, faculty, and community organizers gathered in front of the student union and publicly protested changes in state laws governing collective bargaining during a 2011 hearing on Ohio Senate Bill 5.

II. University support for research and creative activities

Research and creative activities by faculty and students flourish at the University because of its commitment to provide financial support and a sophisticated, cutting-edge infrastructure of research laboratories and instrumentation for faculty and students. Faculty and students also benefit from an excellent array of studios, performance venues, and display locations for the performing and visual arts.

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Financial support

An important component of the University’s efforts to foster research is the competitive University Research Awards and Fellowship (URAF) grant programs that are administered by the Office of Research & Sponsored Programs. The funds stimulate new research and scholarly endeavors, support new faculty in developing ongoing programs of research and scholarship, assist senior faculty to move in new directions, and help investigators develop preliminary data in order to secure competitive extramural support for research.

- The Summer Research Award and Fellowship Program provides up to $12,000 for conducting summer research project.
- The deArce Memorial Endowment Fund in support of Medical Research and Development provides up to $25,000 for medical research and development projects.
- The Interdisciplinary Research Initiation Award Program provides up to $100,000 to support a group of at least four faculty from at least two academic departments beginning a major new interdisciplinary research project.
- The Phase 0 SBIR/STTR Program provides up to $8,000 for a faculty member to work with an outside business in the Preparation of a Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) proposal.
- The Proposal Preparation Mini-Grants to Federal Agencies Program provides up to $5,000 in summer salary for revision and resubmitting proposals to a competitive agency.
- The Publications Subvention Program that awards up to $1,000 to support the publication of a scholarly manuscript by an academic press.
- The Archeological Research Fund awards approximately $2,000 annually to help support archeological research
- The Visiting Faculty Research Award Program awards up to $5,000 to invite a visiting faculty member into a UT research project for the summer in order to develop inter-institutional collaborations and to help to forge stronger ties among undergraduate institutions.

The College of Medicine and Life Sciences provides two other research awards.

- The Bridge Funding Program is for investigators with a history of research productivity whose competitive renewals do not receive funding initially, but who are likely to compete successfully for renewed research funding in the near future with an amended application.
- The Translational Research Stimulation Awards (TRSA) Program provides grants for collaborative projects between clinical and basic science investigators with the goal of promoting bench-to-bedside, translational research. The awards are for $50,000, and approximately $500,000 has been awarded over the past several years. The Translational Research Stimulation Awards (TRSA) Program, which started in ___, provides grants for collaborative projects between clinical and basic science investigators with the goal of

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promoting bench-to-bedside, translational research. The awards are for $50,000, and approximately $500,000 has been awarded over the past several years.

As noted the Criterion Two and Criterion Three reports, the management services agreement between the University and ProMedica Health System, Inc., has fostered an unprecedented array of collaborations in clinical teaching service and research. To stimulate the continued development of translational research within The University Toledo and ProMedica a new series of research awards has been established. The specific aim of these translational research stimulation award (TRSA) is to bring together productive scientists to focus on common problems that have application to humans. Translational Research is broadly defined as research that transforms scientific discoveries arising from laboratory, clinical, or population studies into diagnostic or therapeutic applications to reduce the incidence, morbidity, and mortality of human disease. To be eligible for funding, the proposal must involve a UT faculty member and PHS clinician. In the spring of 2011, 17 such proposals were submitted and six were awarded for one year at $25,000 each.

As Table 4.1 demonstrates, URAF funding has totaled more than $2.6 million since 2004.
### Table 4.1: Intramural research support

<table>
<thead>
<tr>
<th>Year</th>
<th>Summer Research Award</th>
<th>deArce Fund</th>
<th>Interdisc. Research Initiation</th>
<th>Visiting Faculty</th>
<th>Phase 0 SBIR/STTR</th>
<th>Proposal Prep. Mini-Grant</th>
<th>Archaeol. Research Fund</th>
<th>Pub. Subvention Fund</th>
<th>Total</th>
</tr>
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<tr>
<td>2004</td>
<td>$225,500</td>
<td>$94,833</td>
<td>$50,000</td>
<td>$15,000</td>
<td>$8,000</td>
<td>$2,000</td>
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<td>2005</td>
<td>$190,292</td>
<td>$98,217</td>
<td>$5,000</td>
<td></td>
<td>$4,000</td>
<td>$2,000</td>
<td>$299,509</td>
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<tr>
<td>2006</td>
<td>$207,856</td>
<td>$95,314</td>
<td>$25,000</td>
<td>$14,800</td>
<td>$3,500</td>
<td>$2,000</td>
<td>$352,470</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>$170,000</td>
<td>$99,921</td>
<td></td>
<td></td>
<td>$3,500</td>
<td>$12,500</td>
<td>$200</td>
<td>$2,000</td>
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<tr>
<td>2008</td>
<td>$176,269</td>
<td>$180,000</td>
<td>$239,427</td>
<td>$5,000</td>
<td>$4,500</td>
<td>$5,000</td>
<td>$2,000</td>
<td>$2,500</td>
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<td>2009</td>
<td>$124,798</td>
<td>$82,112</td>
<td>$168,750</td>
<td>$5,000</td>
<td></td>
<td>$4,500</td>
<td></td>
<td>$425</td>
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<td>2010</td>
<td>$183,400</td>
<td>$90,000</td>
<td>$235,872</td>
<td>$22,000</td>
<td>$24,000</td>
<td></td>
<td></td>
<td>$900</td>
<td>$556,172</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$1,278,115</strong></td>
<td><strong>$660,397</strong></td>
<td><strong>$694,074</strong></td>
<td><strong>$66,800</strong></td>
<td><strong>$35,500</strong></td>
<td><strong>$38,000</strong></td>
<td><strong>$10,000</strong></td>
<td><strong>$3,825</strong></td>
<td><strong>$2,811,686</strong></td>
</tr>
</tbody>
</table>

Source: UT Research and Sponsored Programs

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Undergraduate research

The University offers a wide range of opportunities for all undergraduate students to participate in state-of-the-art research. Students gain invaluable insights into what research is and what faculty members do as scientists, hands-on experience, and multiple opportunities to network with laboratory technicians, graduate students, faculty and staff. Undergraduate research enhances student learning experiences and gets students to think about whether they want to pursue graduate or professional school. Undergraduate research is an important way the University fulfills its mission as “a diverse, student-centered public metropolitan research university.”

Established in May 2006, the Office of Undergraduate Research (OUR-UT) http://www.utoledo.edu/honors/undergradresearch/ is the administrative unit that coordinates undergraduate research programs. The office is an administrative unit of the Honors College and works closely with the college to provide research opportunities for honors students. However, undergraduate research programs are open to all undergraduate students.

The office:

- Advocates for and fosters undergraduate research and creative activity;
- Supports faculty and community members who are interested in increasing undergraduate involvement in their research;
- Connects students, faculty, and community partners with similar research interests;
- Assists with and advocates for increased research funding for undergraduate research; and
- Educates students about ethical conduct in research.

During the summers of 2008, 2009, and 2010, the office supported 30 freshmen who studied in 12 departments under the tutelage of 26 faculty members and 78 sophomores, juniors and seniors who studied in 22 departments under the mentorships of 59 faculty members. The office placed 17 students in city of Toledo administrative departments through the city’s internship program.

Many colleges and departments support undergraduate research through co-op and internship programs with research components. For example, of the 1,151 College of Engineering students who participated in college’s mandatory co-op programs in the last three years, 43 participated in programs with research orientations. In addition, senior students in the College of Engineering complete senior design projects that by nature are research intensive.

The College of Graduate Studies and the College of Medicine and Life Sciences each summer jointly sponsor approximately 12 undergraduate students interested in medical school studies or graduate studies through the Summer Undergraduate Research Fellowship (SURF) Program. http://www.utoledo.edu/med/grad/surf.html.

Departments also support undergraduate research through external and faculty grants and volunteer time from faculty members. For example, the Department of Physics and Astronomy has administered grants from the National Science Foundation for its program, “Research Experiences for Undergraduates,” for the past 20 years, and in the last three summers has Criterion Four Acquisition, Discovery, and Application of Knowledge Third draft of full HLC self-study report Aug. 22, 2011
supported 42 students from UT and other universities across the country. The Department of Chemistry and the Lake Erie Research Center have held or are holding similar National Science Foundation Research Experience for Undergraduate grants.

A Web site provides up-to-date and accurate information about various research opportunities available to undergraduate students, and a student research handbook details research opportunities and covers topics such as responsible conduct of research, writing high quality proposals, and presenting research findings in a professional manner. [http://www.utoledo.edu/honors/undergradresearch/pdfs/ResearchHandbook/StudentResearchHandbook2010-re.pdf](http://www.utoledo.edu/honors/undergradresearch/pdfs/ResearchHandbook/StudentResearchHandbook2010-re.pdf)

A course, “Issues in Research and Scholarship,” (ARS2980) addresses safe and ethical conduct of research and is presented by faculty and staff with expertise in safety and ethics issues. All first-year undergraduate students in the First-Year Summer Research Experience Program (FYSRE) and students participating in the Undergraduate Summer Research and Creative Activity Program (USRCAP) are required to attend the weekly presentations.

In addition to the FYSRE and USRCAP programs, other funded programs include the:

- Academic Year Research Program that allows undergraduate students to work throughout the school year on faculty research projects and earn academic credit;
- Research-abroad and Research Travel Grants opportunities;
- City of Toledo Internship Program that allows students to work in city administrative departments such as finance, neighborhood development, and transportation;
- Student Achievement in Research and Scholarship Program that funds a number of Pell-grant eligible undergraduates to participate in faculty research; and
- Work-Study Research Program, where students choose a research project for their work-study funds.

These programs go beyond the hard sciences and also advance research and creative activities in the social sciences, humanities and fine arts, including English, philosophy, sociology/anthropology, speech/language pathology and women’s studies. Two recent examples in studio art are:

- Hannah Lehmann’s “Sickly Sweet: A Visual Commentary on the History of Sugar and the Implications of Its Use in Contemporary Society,” which was approved for funding in the 2010 USRCAP Program and was presented at the 2011 National Conference on Undergraduate Research at Ithaca College in New York; and
- Emily Fray’s “Germ Warfare and Contemporary Art,” that was selected for presentation at the 2010 National Conference on Undergraduate Research held at the University of Montana. It was chosen from more than 2,600 submissions.

The office sponsors an end-of-the summer research presentation symposium, and undergraduate students have displayed research posters at the annual Posters at the Capitol event held at the Ohio Statehouse in Columbus and at the National Conference for Undergraduate Research. The
program in Columbus helps legislators understand the important role of research in undergraduate education and the benefits to the state. 

http://www.utoledo.edu/honors/undergradresearch/PostersAtTheCapitol/main-posterscapitol.html

The last comprehensive undergraduate research survey conducted in summer 2006 identified more than 100 undergraduate students involved in research. With the expansion of undergraduate research that number is expected to be at least 20 percent higher when the next survey is conducted in summer 2011. Because of the multitude of undergraduate research opportunities and programs, it is a sizeable challenge to obtain an accurate number of undergraduate students involved in research. In many departments, students are paid directly from grants or volunteer their time for the research experience. A mechanism for identifying the students and their mentors would be beneficial. The list of students, faculty members, and departments that participated in FYSRE and USRCAP programs during 2008, 2009 and 2010 can be found at: http://www.utoledo.edu/honors/undergradresearch/research/researchprogramspage.html and navigate to the specific program of interest.

Increasing undergraduate research is a significant subgoal for the institution in the Directions 2011 strategic plan. To realize this goal, several steps are being taken.

First, all undergraduate colleges are represented on OUR-UT’s advisory committee, which allows the office to better publicize research opportunities.

Second, the University decided to continue to fund with local monies the Student Achievement in Research and Scholarship (STARS) program after the Ohio Board of Regents eliminated funding for the statewide cooperative venture aimed at increasing the pool of underrepresented students entering Ohio’s graduate schools. The program was designed to identify the best undergraduate students and groom them for graduate school and ultimately for academic careers. The program targets African-American, Hispanic and Native American students who are underrepresented in their fields of study. Today Pell grant-eligible students at the University can enroll in the program.

Third, UT-OUR spearheaded the adoption of research-intensive courses and established the criteria for the courses.

Fourth, endowed funds for undergraduate research is a high funding priority for Honors College. Such endowments will nurture interdisciplinary and disciplinary work by students in the sciences and humanities.

Research infrastructure

The University’s commitment to scientific inquiry and the importance that it attaches to research as a way to fulfill its mission statement of “improving the human condition” is evident in significant capital improvements and renovations to research laboratories on Main and Health Science campuses, including Wolfe Hall, Bowman-Oddy, Block Health Science Building, McMaster Hall, the Clean and Alternative Energy Incubator, and College of Engineering.

The University expanded its research facilities on Health Science Campus with the opening in 2010 of the new LEED-certified (Leadership in Energy and Environmental Design) Frederic and...
Mary Wolfe Center, which houses laboratories, lecture halls and offices for the College of Pharmacy and Pharmaceutical Sciences. The $26.4 million project also included an addition to the adjoining Howard L. Collier Building that created a 500-seat auditorium and several additional classrooms. The pharmacy expansion to Health Science Campus is leading to more research collaborations among students and faculty and enhances current collaborations in the fields of cancer, diabetes, immunology and transplantation, and neurodegenerative disorders.


In 2010, renovations to the Paul Block Jr. Health Science Building expanded the building by 28,000 square feet. A 7,000-square-foot open courtyard was filled in with four stories of new offices and work space. The freed-up areas, which can handle heavy lab equipment because they are supported by the original foundation, will be converted to more lab space in a second phase of the renovation.

The second floor of the Health Education Building on Health Science Campus that houses the Department of Medical Microbiology and Immunology has also been renovated. The first phase of the $16 million project has been completed, resulting in approximately 12,500 square feet of state-of-the-art renovated laboratory, office, and classroom space.

In addition, core facilities provide a sophisticated and comprehensive research environment. For example, the:

- Center for Materials and Sensor Characterization on Main Campus is used for microstructural, chemical and thermal characterization in the fields of materials, biological and environmental sciences. The facility houses “state-of-the-art” electron microscopes and various other characterization instruments.
- Instrumentation Center, located on Main Campus, provides advice, technical assistance and access to advanced scientific equipment.
- Biosafety Level 3 (BSL3) containment facility contains more than 1,250 square feet for wet laboratory and animal studies on registered human pathogens.
- Genomics Core Laboratory conducts microarray analysis of RNA or DNA samples using either manufactured or custom arrays.
- Advanced Microscopy & Imaging Laboratory conducts various microscopic analyses, including two-photon technologies.
- Electron Microscopy Laboratory is a state-of-the-art facility that specializes in ultrastructural diagnosis of human disease and also provides research support as a University core laboratory.
- Flow Cytometry Core Facility provides experimental for flow cytometric analysis or sorting and can generate publication-quality graphics.

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Infrastructure for creative activity

The University encourages a life of learning among its faculty, staff and students through support of creative activities, providing staff, space and financial support for an annual season of theatre and film events, music concerts and art exhibits.

The theatre and film, art and music departments sponsor a wide variety of creative offerings, primarily at the Center for Performing Arts (CPA) and the Center for Visual Arts (CVA), adjacent to the Toledo Museum of Art.\(^1\) A $2 million renovation of the CPA, completed in summer 2011, enhanced laboratory, performing, rehearsal and classroom space for the music, theatre and film/video programs. Major improvements were made to the recital hall, choral practice room, band/orchestra room, music lab and recording studio, piano lab and the instrument storage area and lobby space for audience.

The Department of English:

- Houses the Creative Writing Program, whose faculty is widely published in fiction, creative nonfiction, and poetry. Students can major in creative writing or minor in English with a writing concentration;
- Sponsors the annual Summers Lecture, which invites renowned writers in literature, literary criticism, and linguistics;
- Sponsors the annual three-day Shapiro writing festival, which includes workshops, readings, and other events. Recent lecturers have included Michael Berube, Sharon Olds, David Bevington, Gwendolyn Brooks, Edward Albee, and Robert Pinsky.
- Started a new literary magazine for students, *The Mill*, which debuted in late spring 2011.

The Urban Affairs Press ([http://www.utoledopress.com/](http://www.utoledopress.com/)) moved to the Department of English in 2010 and became the University of Toledo Press, the book-publishing arm of the University. It:

- Supports the university mission by publishing books with relevance to general readers in Toledo and northwest Ohio;
- Focuses on manuscripts that investigate, highlight, and celebrate the unique identity of the region’s communities, institutions, and individuals;
- Is co-edited by two English faculty members with staff in the University Marketing Office providing graphic design and promotion;
- Receives no financial support from the University beyond a student intern arranged through the Department of English; and
- Publishes works of significance to the community, including *Arab Americans in Toledo* by retired UT English professor Samir Abu Absi and *From Institutions to Independence* by current faculty member Barbara Floyd.

In the Department of Communication, faculty and students creatively:

- Work in a television studio which contains two production sets, HD studio cameras, a green screen, and monitors as well as a fully equipped control room. The studio was built through a combination of financial sources including Ohio Board of Regents funding and Arts and Sciences student tech fees.
• Work together with two full-time professionals to produce live sporting events and sports and public affairs programming.

Students also produce news magazine shows which air on the UT campus cable network, including the award winning UT-10 news show. Facilities are also available for electronic field production and radio production. ([http://www.utoledo.edu/as/communication/facilities/index.html](http://www.utoledo.edu/as/communication/facilities/index.html))

**University libraries**

The University Libraries advances research and scholarly activity and a life of learning by providing extensive resources and research support to the University community. A detailed description of the libraries is found in core component 3d.

**Information technology**

The information technology department provides resources for faculty, staff and students to

• The network infrastructure and both public and private wireless access provide security while improving collaboration and communication for constituents.

• In addition to the infrastructure and wide range of software applications and technology support, virtual computer labs have recently been added to the environment. With a broadband internet connection and a Web browser, students can access virtual computer laboratories loaded with all of the software they need to be successful from any location ([http://www.utoledo.edu/it/vlab/Index.htm](http://www.utoledo.edu/it/vlab/Index.htm)); students are accessing the virtual labs at a rate of approximately 3,000 connections on an average week day.

• The University provides students with email accounts for life.

• The IT strategic plan also incorporates support for faculty, including high performance computing, clustering, virtualization, large storage needs, applications analysis and assistance.

**III. Sponsored research programs**

The University has long recognized the importance of research to the overall mission of the institution. The University’s mission statement expresses a clear commitment to research. Research that discovers new knowledge, creative activities and scholarship are fundamental expectations for the University faculty along with teaching and service.

External research funding for various colleges and academic units at the University reached more than $75 million in fiscal year 2010, a record high for the institution and a measure of the ability of faculty members to successfully compete successfully for extramural funding in difficult economic times and of the excellence and quality of the research at the University.

However, the University attracted $62.3 million in external funding — grants, contracts, and cooperative agreements — during fiscal year 2011, a decrease of approximately $13 million or 18 percent from the fiscal year 2010 record high. A drop in external funding was anticipated by UT officials, as well as by research officers at other universities, partly because of the ending of
the one-time federal stimulus programs under the American Recovery and Reinvestment Act of 2009.

Several additional factors are responsible as well. In previous years, the University won some very large Ohio Third Frontier projects, particularly in solar energy, but did not come out on top on some recent competitions. The Ohio Third Frontier Program is undergoing changes that are likely to make it more focused on short-term commercialization and this is likely to reduce funding available to universities.

When the University put together the targets for research in the 2011 Directions strategic plan, it was based upon a number of assumptions, but the plan was always to increase the research standing of UT compared to other universities. The first assumption was that the Ohio Third Frontier Program would continue to support university research that would give UT and other Ohio institutions an advantage compared to universities in states without such a program. However, the state program is now being directed toward funding short-term commercialization projects that will likely eliminate funding for projects that do not lead to product introduction into the marketplace within a few years.

The second assumption was that there would be an increase in federal funding to support research, partly through the support of the Ohio congressional delegation. However, Congress now appears to have little appetite to increase federal funding for research, and UT, as well as other universities, is working with congressional officials to explain the value of scientific research to the state and nation. The University understands it is in a very competitive environment for research funding, especially at the federal level. Increased competition for research funding has led to lower funding-success rates, and the growth in federal spending for research is likely to slow significantly over the next several years as the political system attempts to bring the budget deficit into balance.

Despite the reality of federal and state support for research, UT still maintains its goal of improving its national standing as a research university. In the year 2000, for example, the University of Toledo was ranked 225th in the nation in research funding and the Medical College of Ohio was ranked 220th. UT was sixth in the state in National Science Foundation (NSF) rankings among the state institutions, behind Ohio State University, University of Cincinnati, Wright State University, Ohio University, and the University of Akron. The main campus saw a dramatic increase in its overall NSF ranking prior to the merger, and when the new university was formed the rankings increased further. In the latest NSF rankings, UT is now ranked third among the Ohio public institutions — behind OSU and the University of Cincinnati— and 160th in the nation.

A major theme in the Directions 2011 strategic plan is for the University to enhance its standing “as a major metropolitan research university with internationally recognized areas of research, scholarship and creative activity.”

Targeted research efforts outlined in the Directions 2007 strategic plan resulted in robust funding in science, technology, engineering, mathematics and medicine (STEMM) disciplines, areas where faculty members have achieved national and international recognition. An analysis of sponsored program awards provides some interesting trends.

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Among the colleges, the biggest increase in funding came in the College of Medicine and Life Sciences, which reached nearly $27 million in 2010 after hitting about $22.5 million in 2009. The college was at $18.3 million in fiscal year 2008. The college has a strong faculty who work at the cutting edge of biomedical research. They carry out a wide range of research programs that range from basic science studies into the dietary and genetic risk factors in obesity and diabetes and the neurotoxicity of amphetamines to clinical trials of new heart medications and anti-cancer therapies.

More than $22 million in external funding was recorded in the College of Arts and Sciences, and the College of Engineering increased more than $1 million to reach $11.6 million in 2010.

Of significance was the fact that 11 cross-campus collaborations were funded in fiscal year 2010, providing clear evidence the merger has created new synergies within the UT research community.

Faculty anchor the University’s research enterprise and are involved in advanced research in their fields through engagement of graduate and undergraduate students; cross-disciplinary research; inter-institutional research and development; publications in refereed journals; grants and other mechanisms.

The Office of the Vice President for Research and Economic Development oversees research and scholarly activities at the University. The Office of Research and Sponsored Programs, an administrative unit, provides valuable support services for researchers. The unit identifies funding sources and opportunities and encourages faculty researchers to pursue them; submits proposals; prepares and administers grant budgets, sponsors grant-writing workshops; promotes partnerships between University researchers and government agencies, businesses and other agencies; and ensures compliance with federal, state, and university policies.

The University ranks high in translating research funding into invention disclosures, licenses and new start-up companies. A strong incubation program brings technology entrepreneurs together with faculty and students to advance their technology while providing the business support services needed to grow the company. The University’s technology transfer office assists faculty, staff and students with filing invention disclosures and patents and in establishing contacts with individuals and firms interested in commercializing the inventions. A fuller description of the program is contained in core component 5a. [http://www.utoledo.edu/research/techtransfer/index.html](http://www.utoledo.edu/research/techtransfer/index.html)

As shown in Table 4.3, the Federal government and the state of Ohio provide the majority of the University’s sponsored support. Work in the STEMM areas enabled the colleges of Arts and Sciences, Engineering and Medicine and Life Sciences to generate approximately 80 percent of the University’s extramural support, as Table 3 shows.

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Table 4.2: Research awards by sponsor class

<table>
<thead>
<tr>
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<tr>
<td>Ohio Govt</td>
<td>$7,147,746</td>
<td>$6,244,423</td>
<td>$10,116,225</td>
<td>$6,384,638</td>
<td>$8,027,880</td>
<td>$24,421,033</td>
<td>$8,817,956</td>
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<tr>
<td>Other Govt</td>
<td>$260,202</td>
<td>$334,368</td>
<td>$274,994</td>
<td>$96,360</td>
<td>$41,565</td>
<td>$59,123</td>
<td>$77,102</td>
<td>$108,045</td>
<td>$108,045</td>
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<td>Ed. Inst.</td>
<td>$640,591</td>
<td>$383,543</td>
<td>$1,658,400</td>
<td>$256,442</td>
<td>$236,470</td>
<td>$627,256</td>
<td>$375,395</td>
<td>$217,781</td>
<td>$97,071</td>
<td>$114,803</td>
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<tr>
<td>Ed.Inst. Found.</td>
<td>$20,000</td>
<td>$35,849</td>
<td>$18,000</td>
<td>$55,054</td>
<td>$20,000</td>
<td>$64,000</td>
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<tr>
<td>Corp.</td>
<td>$2,070,055</td>
<td>$1,989,152</td>
<td>$2,055,328</td>
<td>$2,796,789</td>
<td>$2,380,318</td>
<td>$3,403,208</td>
<td>$3,524,448</td>
<td>$3,668,370</td>
<td>$3,308,862</td>
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<td>Non-Profit</td>
<td>$2,335,202</td>
<td>$3,148,151</td>
<td>$3,057,892</td>
<td>$2,409,714</td>
<td>$2,409,761</td>
<td>$1,925,353</td>
<td>$3,611,476</td>
<td>$4,173,496</td>
<td>$1,477,035</td>
<td>$1,048,933</td>
</tr>
<tr>
<td>Total</td>
<td>$43,582,077</td>
<td>$47,441,104</td>
<td>$55,752,206</td>
<td>$55,594,680</td>
<td>$57,439,214</td>
<td>$62,156,292</td>
<td>$56,316,789</td>
<td>$71,589,421</td>
<td>$75,494,123</td>
<td>$62,278,934</td>
</tr>
</tbody>
</table>

Source: UT Research and Sponsored Program
Federal agencies continue to be the major source of research funding for the College of Medicine and Life Sciences, with the National Institutes of Health being the primary agency of support. It is anticipated that with the development of the Center of Excellence in Translational Health and Biomarker Research and Individualized Medicine, funding to the college will increase.

| Table 4.3. Research funding by college |
| **Colleges** | **2005** | **2006** | **2007** | **2008** | **2009** |
| Arts and Sciences | 11,601,571 | 8,311,400 | 28,128,855 | 13,032,686 | 26,310,640 |
| Business Administration | 439,122 | 298,567 | 394,312 | 207,292 | 387,771 |
| Education | 3,651,459 | 5,024,359 | 3,679,313 | 8,261,165 | 3,498,248 |
| Engineering | 9,393,162 | 12,964,953 | 7,311,100 | 11,342,595 | 10,458,450 |
| Health Science and Human Services | 2,273,291 | 3,220,932 | 637,526 | 1,153,289 | 1,600,596 |
| Law | | | | | 197,446 |
| Medicine | 22,016,334 | 22,591,907 | 19,838,292 | 17,866,060 | 21,447,068 |
| Nursing | 23,396 | 241,251 | 27,008 | 42,429 | 65,725 |
| Pharmacy | 2,244,535 | 1,438,141 | 1,021,129 | 1,423,540 | 2,051,717 |
| Other | 4,984,417 | 4,403,390 | 1,816,225 | 5,471,127 | 5,546,041 |

Source: UT Research and Sponsored Program

**IV. Focused areas of research excellence**

After the 2006 merger, the mission, vision and strategic direction for the new university was outlined in the Directions 2007 strategic plan that called on the University to be “highly distinguished and ranked internationally as a leader in research and intellectual property transfer focusing on several strategically selected thematic areas across multiple academic units.” The seven identified priority areas included:

- Environmental impacts on health;
- Energy sustainability and conservation;
- Translational interfaces of health sciences, engineering and clinical care;
- Science and technology education;
- Health care delivery systems;
- Search for origins; and
- Public engagement, regional economic development and global competitiveness.

Since 2001, the University has strategically invested in several programs, most notably those in the area of renewable energy and the environment. The University has nearly tripled the level of its energy-related research. With a strong academic team as well as a strong record in commercializing thin-film photovoltaic technology, the Ohio Department of Development (ODOD) awarded the University $18.6 million in support along with matching contributions of $30 million from federal agencies, universities and industrial partners to establish the Wright Center for Photovoltaic Innovation and Commercialization (PVIC). PVIC, which has its hub at UT, includes partners Ohio State University and Bowling Green State University and consists of...
a world-class technology platform that uses second- and third-generation photovoltaic materials to generate clean electricity. Besides reducing solar costs and improving technologies, PVIC’s future successes will be in transferring these new techniques from laboratory to the production line. UT also won an Ohio Research Scholars project from the ODOD to provide funds for supporting new faculty hires in solar energy.

The University’s early emphasis on supporting photovoltaic research resulted in increased funding for the former College of Arts and Sciences, where many of the solar power researchers resided. As Table 4.2 demonstrates, extramural support for the researchers came from federal, state, and corporate grants and contracts. Generous support from the Ohio Department of Development (ODOD) and the Department of Defense have enabled the solar scientists to more than double their funding since 2005. The funding has been instrumental in lifting the University’s photovoltaic research community to international prominence. Moreover, several spin-off companies have been created as a result of the research, which is proving to be an economic engine for northwest Ohio.

Recognizing the University’s extensive expertise in photovoltaic research, the University System of Ohio (USO) approved in 2009 a center of excellence in advanced renewable energy and environment. This is a collaborative, interdisciplinary endeavor focusing on advanced renewable energy and environmental and ecosystem sciences, monitoring and remediation. The center also concentrates on development of biomass energy from non-food sources, wind energy, energy storage management and fuel cells, environmental and ecosystems monitoring and remediation. The University has obtained more than $54 million in extramural grants and contracts in the past three years in the area of renewable energy and the environment. The University is now recognized as a national leader in photovoltaic research and development thanks to favorable stories in newspapers, magazines and on television.


The second USO-sponsored center of excellence is in the area of transportation and logistics. The center is working to improve Toledo’s status as an intermodal hub. Toledo’s central location, its quick and easy access to Detroit, Chicago, Cleveland, Pittsburgh, New York City and other urban centers, and its excellent transportation infrastructure have made it an important center for logistics and distribution nationally and globally. The university established the Intermodal Transportation Institute (ITI) in 2001 and the federally funded University Transportation Center (UTC) in 2005 with a theme of transportation and logistics. The UTC, a valuable source of information and expertise about transportation and logistics, is one of only 60 federal university transportation centers nationwide. Because safe, secure and efficient transportation systems are essential to economic viability, quality of life and national security, the UTC theme is “Transportation for Economic Security and Development: Alternate Energy, Infrastructure Utilization and Supply Chains.” The ITI and UTC leveraged the significant academic excellence and extramural research support in the Department of Information Technology & Operations Management in the College of Business and Innovation and the Department of Geography and Planning in the former College of Arts and Sciences to establish the center.

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A third USO-designated research center of excellence has been established in the area of translational health and biosciences in biomarker research and individualized medicine, an important, large and growing sector of the U.S., Ohio and regional economy. UT’s concentrated bioscience research is an existing, strong, unique focus with more than $44 million in extramural grants and contracts awarded in the past three years. Emphasizing biomarker research in the area of personalized medicine holds the potential to stimulate further funding and collaborations.

In March 2010, the University created the Institute for Sustainable Engineering Materials, a unit that targets application-driven design, synthesis and processing of sustainable engineering technologies. The institute, which involves engineering faculty and faculty in other colleges, has a research focus in sustainability, biomass conversion, materials types and process scales.

V. Centers and institutes

Support for research at the University is also provided by numerous multidisciplinary centers, institutes that are aligned with the University’s mission and perform at a high standard. The centers and institutes, which focus on important health, environmental and societal issues, provide stimulating teaching and learning venues where researchers and students come together, interact and collaborate on complex, interdisciplinary problems. The University encourages the establishment of research-related centers and institutes, which improve the institution’s reputation and also aid in recruiting outstanding new scholars. Research centers and institutes are designated through an approved evaluation and review in accordance with University policy. The University Research Council, a faculty body, evaluates proposals to create new research centers and also conducts periodic reviews to ensure they function properly, have high standards, and support the University’s mission. The Directions 2011 strategic plan calls for the University to provide “high-quality” centers and institutes and that “every institute and most centers will be externally funded by 2013.” http://www.utoledo.edu/policies/academic/research/pdfs/iii_2_3.pdf. Some research centers are listed below.

- Jacobson Center for Clinical and Translational Research conducts or supports the conduct of sponsored and investigator-initiated clinical trials of new medications and medical devices, promotes internal and external research collaborations and supports training and development of current and future clinical investigators and clinical research coordinators. The center increases the clinical research capacity at the University. Clinical trials create new knowledge and provide new types of treatments for patients.
- Plant Science Research Center undertakes basic research in plant biology with an emphasis on plant molecular biology, nutrition, pathology, bioremediation, and ecology.
- Center for Materials Science and Engineering enhances materials research and education at the University.
- Lake Erie Center, an interdisciplinary research and education center, works to solve environmental problems at the land-water watershed and bay-lake exchanges in the Great Lakes, the world’s largest freshwater ecosystem.
- Polymer Institute conducts research and development in polymer and plastics technology with funding from various government and state agencies.
• Center for Drug Design and Development, a facility with an established network of expert resources and capabilities, spans the pathway of drug development from fundamental research to regulatory approval.

• Center for Diabetes and Endocrine Research, collaboration between the College of Medicine and Life Sciences and the College of Pharmacy and Pharmaceutical Sciences, brings together scientists and students to explore the basic science behind diabetes and to seek better scientific understanding and treatment for the disease.

VI. Professional development opportunities

The University’s professional development opportunities — grants, internships, lectures, training and other activities — support lifelong learning and ongoing enrichment of the professional lives of faculty and staff. The University encourages faculty members to develop skills and knowledge necessary to stay at the forefront of their respective disciplines. Article 5 of the AAUP collective bargaining agreement notes the obligation of faculty members to take the initiative in their own professional development as teachers, scholars, and professionals. The document mandates that “members shall devote their energies to developing and improving their scholarly competence.” Strong, effective faculty and staff development programs are critical for the University to reach its potential.

• The University Research Advancement Faculty Fellowship (URAFF) is described above.

• The Strategic Enhancement Awards Program funds proposals of existing mission-driven University programs or development of new interdisciplinary, collaborative programs. Past examples of funded programs include a $5,000 award to the Graduate Student Association to hold a research symposium for graduate students; a $22,000 grant to fund a “Women in Science Speaker Series” that was tied to the larger issues of women in the STEMM disciplines; and a $24,000 award for the “Safe Schools” anti-bullying project that built upon existing faculty research, teaching excellence and student interest across several colleges and that engages schools in northwest Ohio.

• The Office of Global Initiatives oversees the Kohler International Travel Fund that supports international research travel for faculty members. The University is also a key member of the University Studies Abroad Consortium that provides faculty with the opportunity to teach abroad and to enhance their teaching skills.

Workshops such as “Getting to Professor” and “Promotion and Tenure” have been offered by Faculty Senate and the Provost’s Office.

• The Learning Enhancement Center offers a variety of professional development workshops for faculty and staff.

To attract and further develop a talented and diverse workforce, the University offers professional development opportunities for staff and faculty.
The Office of Quality and Continuous Learning (OQCL) strives to create a culture of continuous improvement, innovation and ongoing learning that allows faculty and staff to offer outstanding service to students and patients.  
http://www.utoledo.edu/offices/oqcl/index.html

- Learning Ventures provides ongoing training for faculty members who want to improve their skills in using online teaching resources for classes. Both in-person and online training is provided throughout the year as well as vodcasts, blogs, and other offerings to supplement training. http://www.utoledo.edu/dl/faculty/index.html

- Staff and faculty development is also supported through a tuition waiver program that allows eligible full-time and part-time faculty, staff, their spouses, domestic partners, and children to take college-credit courses at the University with no or reduced tuition costs. Access to such educational programs improves the skills and knowledge that employees bring to their jobs and improves their chances to advance within the institution. Eligibility and benefits are dependent on campus and classification. The program is administered by the Human Resources Department. In fall 2009, for example, 900 faculty and staff or members of their families used the benefit at a value of approximately $2.3 million. Approximately one half of this number uses this benefit each summer. http://www.utoledo.edu/depts/hr/benefits/fee_waivers.html

- The University actively participates in the American Council on Education (ACE) Fellows Program, which prepares promising faculty and senior higher education administrators for senior leadership positions in college and university administration. http://www.acenet.edu/Content/NavigationMenu/ProgramsServices/FellowsProgram/index.htm One University faculty member participated as an ACE fellow in the 2010-2011 academic year. In 2004 and 2005, three faculty members participated. UT has hosted ACE fellows on campus as well.

- From 2007 to 2009, the Provost’s Office sponsored regular professional development workshops for academic administrators. Topics included international hiring, evaluating teaching, state politics and the higher education budget, information and computer security, student safety and security, protecting human subjects’ rights and student privacy. Support documentation, such as reports and PowerPoint presentations, were made available on a Web site.

Resources provided by the colleges for faculty development vary widely. In some colleges and departments, funds for conferences and travel to conferences are contingent on availability within college budgets and are at the discretion of the department head or the college dean. Some colleges do not have designated line/accounting budgets, and any funds allocated for faculty development come from college operating budgets. In some departments, newly recruited faculty members are provided start-up funds, which often include professional development dollars. Faculty members applying for external grants, particularly in the scientific disciplines, often include in their budgets funding to attend conference and meetings, while external funding opportunities in other disciplines, particularly the arts, are limited.
VII. Fostering a life of learning for the broader community

In addition to supporting a life of learning and inquiry for students, faculty, staff, and administrators, the University provides educational opportunities — continuing education, public lectures, and degree options for non-traditional students — for Toledo and northwest Ohio residents who want to learn new information and skills. This commitment to the community is reinforced by the planned increase in learners enrolled in continuing education and lifelong programs as outlined in the outreach and global engagement section of the Directions 2011 strategic plan.

Degree options for non-traditional students

For some students, a life of learning means returning to college to complete a degree or attending college for the first time. The University takes seriously the support of non-traditional learners.

- The recently established College of Adult and Lifelong Learning [http://www.utoledo.edu/call/](http://www.utoledo.edu/call/) provides career and life coaching, alternatives for degree completion, and academic support to new, continuing and reentering adult learners in a respectful and nurturing environment. It helps students transition to college life and establishes a foundation for educational attainment, career success, and lifelong learning. Some of the specialized services available for adult and non-traditional students offered by the college include scholarships, exploration of majors and careers, prior learning assessment, Program 60 for individuals 60 years of age or older, and the Military Service Center to help veterans achieve their academic goals.

- Learning Ventures accommodates adult learners and students who are unable to attend classes on campus, making lifelong learning possible for a large percentage of the population.

Continuing education

All colleges provide continuing education programs, public lectures and degree options for non-traditional students that serve local and regional needs. Three examples are:

- Programs offered by the Center for Continuing Nursing Education equip nurses with new information and skills for patient care. A complete description of continuing nursing education is found in core component 5d.

- The College of Pharmacy and Pharmaceutical Sciences is accredited by the Accreditation Council for Pharmaceutical Education as a provider of continuing pharmacy education.

- The Center for Continuing Medical Education provides excellent opportunities to extend education and promote lifelong learning for internal and external constituents. Accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians, the center sponsors conferences, workshops and online courses to help physicians maintain, develop and increase the knowledge, skills and professionalism they bring to patient care. Additional information about continuing medical education is located in core component 5d.

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Public lectures

University-sponsored lecture series and speaker programs provide opportunities for the University community and Toledo and northwest Ohio residents to learn, to grow and to engage in thoughtful discussion. The lecture series establish links between curricular and co-curricular activities on campus. Speakers generally address topics of current interest to students and the public, and over the years the programs have been well attended. A complete list of campus speakers in recent years is located at.

- The Edward Shapiro Distinguished Lecture Series has brought to campus thought-provoking speakers such as Elie Wiesel, Robert Kennedy Jr., Toni Morrison, Jon Meacham, and Oliver Sacks.

- College of Law lecture series have featured talks by individuals of national prominence such as judges Abner J. Mikva and Constance Baker Motley, John Stossel, and commentator Linda Chavez. Other lecture series have brought to campus Johnnie Cochran, Morris Dees, Professor Lani Guinier, Robert Kennedy, Jr., Former Attorney General of the United States Edwin Meese III, Ralph Nader, Supreme Court justices Sandra Day O’Connor and Antonin Scalia, former Solicitor General Kenneth Starr, and many others.

- The College of Arts and Sciences, as part of its 100th anniversary celebration, brought to campus such notable speakers as Dr. Ben Carson, Jack Lousma, David Schutt, Dr. Tim Berra, Brooks Martner, Luis Echegoyan, Bradley Miller and Alice Shapley.

VIII. Scholarship and research to stimulate organizational and educational improvements

UT faculty, staff, and students apply their expertise to improve the institution in a variety of ways. While individual faculty members assist the University in their particular area of expertise, there are also interdisciplinary efforts where faculty members use scholarship and research to stimulate organizational and educational improvements.

- Faculty expertise on the President’s Commission on the River, which develops and implements projects to improve the Ottawa River that flows through Main Campus, has been used to sample and assess fish populations and the overall health of the river’s aquatic ecosystem, to design and install rain gardens for storm water mitigation, to clear vegetated banks and plant native plants, to design an in-stream river restoration project, to work to beautify and improve public access, to develop a community education and outreach initiative, and to construct river overlooks. (http://www.utoledo.edu/commissions/river).

- Other examples can be found in the College of Nursing, the Department of Theatre and the master’s program in higher education.
IX. Recognition of research, creative achievement

To foster and encourage a life of learning, the University publicly recognizes scholarly achievements and accomplishments of undergraduate, graduate and professional students, and faculty in acquiring, discovering and applying knowledge.

Student presentations include events such as the College of Engineering’s semiannual Undergraduate Research and Senior Design Engineering Project Exposition, where senior students display the results of their capstone design projects to the public and the University community. Project ‘clients’ from nonprofits, industry, government, academia and individuals attend to view the prototypes and displays.

- Research accomplishments of faculty and students are recognized by the University. For example, the Jacobson Center annually sponsors a Health Science Campus Research Day, while the Graduate Student Association sponsors the Midwest Graduate Research Symposium. The Council for Biomedical Graduate Students holds an annual research forum on Health Science Campus, and the College of Nursing also highlights faculty research during a research conference program held in the spring. Such events generally feature research posters presented by faculty, students, keynote speakers and awards for outstanding scientific studies. For example, the 2011 Health Science Campus Research Day featured a talk by Dr. Ferid Murad, the 1998 Nobel Laureate in Medicine who also received an honorary doctor of science degree from the University.
- The University annually recognizes research scientists as part of a faculty awards ceremony held in the spring.
- Students in the College of Visual and Performing Arts departments regularly participate in theatre productions, student gallery exhibits, film screenings and music concerts to showcase their creative activity.
- Faculty accomplishments are recognized though endowed chairs and distinguished university professorships, one of the highest honors the University can bestow on faculty members. Successful candidates demonstrate a record of excellent teaching, a national or international reputation for peer-recognized and peer-reviewed scholarship or professional activity appropriate to their disciplines, and exemplary professional service, particularly in ways that utilize their professional expertise to advance their disciplines or the community. There are currently 13 distinguished university professors.

Internationally and nationally recognized peer-reviewed journals routinely publish research articles by University faculty members, and scholarly research and creative accomplishments by the faculty are recognized by professional societies and organizations. Findings from UT research laboratories are often presented at national and international academic and scientific meetings and are reported by news organizations. University poets, artists and musicians have been honored for their creative endeavors in publishing scholarly books and articles, novels,

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poetry; in displaying painting and sculptures, in performing in concerts and plays and in other forms of creative work. Some recent notable faculty awards and recognitions include:


- An associate professor and chair of health and recreation professions received the 2010 American School Health Association Distinguished Service Award, which recognizes recipients for making service an integral part of their professional careers. [http://utnews.utoledo.edu/index.php/12_21_2010/faculty-member-recognized-for-distinguished-service](http://utnews.utoledo.edu/index.php/12_21_2010/faculty-member-recognized-for-distinguished-service)

- In 2010, the Merck Professor of Clinical Pharmacy at UT was elected vice president for finance for Phi Kappa Phi, the nation’s oldest and largest all-discipline honor society. He also serves on the organization’s board of directors. [http://utnews.utoledo.edu/index.php/10_15_2010/ut-professor-elected-to-honor-societys-national-board-of-directors](http://utnews.utoledo.edu/index.php/10_15_2010/ut-professor-elected-to-honor-societys-national-board-of-directors)

- An associate professor of communication and the Ability Center of Greater Toledo Endowed Chair in Disability Studies was named in 2011 the Outstanding Scholar in Performance Studies and Theatre by the Central States Communication Association. [http://utnews.utoledo.edu/index.php/05_09_2011/associate-professor-receives-award-for-works-in-performance-studies](http://utnews.utoledo.edu/index.php/05_09_2011/associate-professor-receives-award-for-works-in-performance-studies)

- An article written by a professor of medical microbiology and immunology was one of the 10 most-accessed articles of 2010 in the journal *Biochemistry*. The article reviewed the current state of epigenetics, which is the study of changes in DNA that do not involve mutation, and addressed key questions in some recent studies on the topic. [http://utnews.utoledo.edu/index.php/04_22_2011/professors-publication-recognized-in-biochemistry-journals-top-10](http://utnews.utoledo.edu/index.php/04_22_2011/professors-publication-recognized-in-biochemistry-journals-top-10)

- Three College of Law faculty members are members of the American Law Institute, the leading independent law reform organization in the country. [http://utnews.utoledo.edu/index.php/03_18_2011/professor-elected-into-american-law-institute](http://utnews.utoledo.edu/index.php/03_18_2011/professor-elected-into-american-law-institute)

Extensive internal and external publicity is given to faculty, staff and student scholarly achievements.
Articles on faculty and student research are regularly published in the UT News, the University faculty and staff publication, and in the student newspaper, the Independent Collegian (http://utnews.utoledo.edu/index.php/category/research; http://utnews.utoledo.edu/index.php/category/arts)

Special publications such as UT Discovers provide topical surveys of current projects. http://www.utoledo.edu/research/NewsReports.html.

Biomedical research at the University is highlighted in a publication, Rocket Science.

Toledo’s daily newspaper, The Blade, and other publications have published articles on University research and creative work. (http://journals.utoledo.edu/headlines/).

http://www.time.com/time/health/article/0,8599,2074428,00.html

The University Authors and Artists Exhibit, hosted by the Canaday Center in Carlson Library since the 1950s, displays faculty publications and, for faculty in the Department of Art, their recent works. Currently the exhibit is held every other year. The 2010 exhibit, featuring work from 2009 and 2010, included 449 works by faculty authors.

Many college newsletters include news stories highlighting achievements of faculty and students.

X. Summary

While the University has a long history of providing support for a life of learning, continued difficult economic conditions will require the University to be efficient and resourceful as it supports research and creative activity of its faculty, staff and students. Support for faculty development appears to be inconsistent across the University as a whole, with strong faculty development funding existing in some areas and less in others. Because of the varied sources of funding, it has been difficult to generate comparative numbers. In the current economy, this sort of support is frequently a target of budget reductions. To remain competitive with other research universities, the University should make certain that internal support of faculty development is available across all disciplines.

Long-needed new construction and renovation of laboratory, teaching, and performance space on Main and Health Sciences campuses is to be commended. The construction of the new College of Pharmacy and Pharmaceutical Sciences building on Health Science Campus, the Frederic and Mary Wolfe Center, has resulted in additional lab space on Main Campus, but does not fully address the current shortage of adequate instructional laboratory space for science courses on Main Campus. Construction of the new Center for Transitional Scientific Research should address the problem. Likewise, the expansion of the Center for Performing Arts has provided much-needed space for the three departments in the new College of Visual and Performing Arts; however, there is still an additional need for more space to adequately support student learning and faculty creative activity.

It is recommended that the University continue to provide opportunities to make the most of the talented faculty and staff. For example, the importance of interdisciplinary work needs to be emphasized, with the development of policies and procedures to reward faculty interdisciplinary research and increased education for faculty regarding the University’s support for
interdisciplinary work. The University should also consider reinstituting a program to develop 
academic administration skills of faculty who are interested in becoming administrators.

Finally, the University would benefit from a centralized repository to capture in a uniform or 
comprehensive way reliable and frequently used information about the institution. Although 
information about research grants is available from Office of Grants Administration, and deans 
and provosts gather information about faculty activity as part their reviews, there is no 
administrative division, for example, that cumulatively gathers and stores information about the 
faculty’s research, scholarly and creative activities as reflected in presentations and publications. 
Such a database would facilitate assessment of progress on Strategic goal 3, subgoal 1 in 
Directions 2011 that states that the University “will advance a culture of research, scholarship 
and creative activities.” In general, the difficulty of obtaining this kind of data has been an issue 
in preparing the self-study report as well as in on-going assessment and program review efforts 
and institutional strategic planning and review.

**Core component 4b: The organization demonstrates that acquisition of a breadth of 
knowledge and skills and the exercise of intellectual inquiry are integral to its educational 
programs.**

For students to embrace a life of learning, they must build a strong foundation of the knowledge 
and skills needed for intellectual inquiry. Directions 2011 has specified the need to “adopt 
consistent student learning objectives for all undergraduate courses that promote and assess 
innovation and analysis, including critical and creative thinking, written and oral communication, 
quantitative literacy, information literacy, and teamwork and problem-solving.” These skills 
make up the foundation for the life of learning upon which our students and graduates build.

Since the last self-study, the University has focused on enhancing the undergraduate experience. 
The curricular and co-curricular learning opportunities available to students to develop core 
skills for academic and life success are extensive, including “Beginning the Academic Journey” 
courses, academic skills enhancement, learning communities, Writing Across the Curriculum, 
and information literacy instruction. In addition, the University provides many learning 
experiences outside the classroom.

**I. The core undergraduate experience**

Because the University wants every student to graduate and to be successful in their careers and 
lives, programs are in place to make sure they have a strong start. This is most evident with the 
direct-from-high-school (DHS) students. Core competencies prepare undergraduate students for 
full participation as active, contributing members of their academic, social and professional 
communities.

Students are introduced to that core in the First-Year-Experience (FYE) Program, designed to 
facilitate DHS students’ transition to higher education. The program:

- Introduces students to a scholarly community in the foundation of their college journey;
- Builds and sustains a vibrant and diverse college community committed to the success of 
  first-year college students and all students in transition;

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• Acquaints students with the academic tools and opportunities for intellectual growth and exploration inside and outside the classroom; and
• Ensures first-year and transition students feel welcomed, celebrated, and supported through the use of peer mentors, orientation classes (Beginning the Academic Journey or BAJ), service learning, activities, and increased interaction with faculty outside of the classroom.

In her welcome letter to students, Program Director Jennifer Rockwood sums up the purpose of the FYE: “Upon the completion of your first year, you should have a positive sense of self, with the confidence and tools necessary to achieve both academic and life-long goals.” (http://www.utoledo.edu/utlc/fye/jenmessage.html).

Examples of programming from the 2010 fall semester highlight the diversity of experiences for students.5

II. Academic skills enhancement and other academic assistance
To help students overcome difficulties with college-level coursework and to foster student success, the University provides a variety of academic assistance programs. These programs also promote students’ appreciation for lifelong learning. Many of the programs are described in core component 3c.

III. Learning communities
The University currently supports 11 living learning communities that are based around students’ majors or interest. The communities, which share residential space in campus residence halls, provide students with an atmosphere and opportunities to connect with other students who share similar academic or other interests. The University’s living learning communities are discussed more fully in core component 3c.

IV. Undergraduate general education/core curriculum
The general education guidelines passed in 2005 and revised in 2008 states that the general education curriculum was designed to:

• Broaden the range of experiences open to students;
• Help students to develop the disciplined, analytical and critical skills necessary for intellectual development throughout life;
• Prepare students to make better-informed and humane decisions and to be able to communicate those decisions to others; and
• Cultivate students’ potential for creative expression.

The curriculum was divided into skills areas — English composition and mathematics — and subject areas — humanities and fine arts, social sciences, natural sciences and diversity (U.S. culture and non-Western culture). For a complete list of learning objectives for each basic skill and subject area, see

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Developing and assessing the core curriculum is the purview of the Core Curriculum Committee of the Faculty Senate. This committee completed an inventory of core course syllabi and assessment of student learning outcomes during 2009-2010. (A more in-depth discussion of general education assessment can be found in core component 3a.) This led to a recommendation to, and subsequent approval by, Faculty Senate to inactivate 51 courses then included in the core for historically low enrollments or infrequency of offering. This reduced the course inventory to 253 courses, but led the University to think about the core curriculum and assessment of student learning in the core. Also during fall 2009, core courses were charted in a matrix to evaluate the alignment of course learning objectives with the core learning objectives for the subject/skill areas outlined in the guidelines of development of general education course. The outcomes from this task, combined with the reduction in the general education course inventory led the University to explore new ways of thinking about student learning outcomes for core curriculum and their relevancy for the 21st century.

During fall 2010 and spring 2011, extensive discussions took place regarding core curriculum and its assessment. At the Faculty Senate meeting on April 26, 2011, a general education resolution was passed that “endor[s] the work of two committees…to reframe our core experience…in terms of…five competencies. The five competencies are:

- Communication
- Scientific and quantitative literacy and reasoning
- Personal, social, and global responsibility
- Information literacy
- Critical and integrative thinking

General education courses are courses that are in special relationship to the core, a relationship that is recognized by their approach, breadth, focus on learning outcomes, attention to integrating disciplinary skills and knowledge with more general themes, problems, and areas of concern that form the context of relevant education. These courses are distributed over the disciplines as required by the state of Ohio and include only lower division course numbers.

To prepare for full implementation in fall 2012, pilot sections of composition I and college algebra are being offered in fall 2011. Over the summer and fall 2011, a group of volunteers from the Faculty Senate and a committee from the Office of the Provost collaborated to provide additional detail about the core competencies language, assessment of student learning within the competencies and processes for course approval and implementation.

V. Writing across the curriculum

University colleges and programs provide additional opportunities for undergraduate students to continue their academic journeys by learning content in their chosen disciplines as well as
increasing competency in core skills. For example, the former College of Arts and Sciences (CAS) had a Writing Across the Curriculum (WAC) Program established in the late 1980s that was developed in response to a need of students for additional opportunities to practice critical reading and writing skills. While all students were required to pass six hours of English composition, WAC was established (http://www.utoledo.edu/as/wac/wac_background.html) to develop better writers and better critical readers and thinkers. Students were required to take one writing-intensive course early in their studies (in any discipline) and one writing-intensive course within their disciplines. The disciplinary-specific course focused on the critical questions, stances, and formats particular to a major, and prepared students for the more complex critical reading and writing tasks expected in the final year of undergraduate education as well as advanced education.

With the recent reorganization of CAS into the colleges of Languages, Literature, and Social Sciences; Natural Sciences and Mathematics; and Visual and Performing Arts, each of the new colleges reaffirmed their commitment to the initiative. Seeing the broad and continuing support for WAC, the committee invited all the colleges to explore opportunities to expand WAC across the university and to discuss whether to make the transition to Communication Across the Curriculum, encompassing oral as well as written communication. Exploration of these new opportunities began in spring 2011.

VI. Information literacy and the exercise of intellectual inquiry

The University’s educational programs provide broad knowledge and skills and intellectual inquiry, including making sure that students understand how to find, evaluate, and use information appropriately. It has been said that trying to use, find, and evaluate quality information in the 21st century is like drinking from a fire hose. No longer is the problem a dearth of information, but rather a surplus — good, bad, and in-between.

University Libraries has an active information literacy education program. Program learning objectives have been developed based upon the information literacy competency standards of the Association of College & Research Libraries (ACRL) and the Ohio Academic Content Standards for Libraries http://libguides.utoledo.edu/infolit Undergraduate students learn increasingly complex information literacy skills starting in orientation (BAJ) courses, then in composition courses and in courses in their major and/or professional programs http://tinyurl.com/448bpv6 All colleges at the University have a faculty librarian liaison to provide relevant information literacy skills education. (http://www.utoledo.edu/library/tech/liasons.html).

In the past two years, faculty librarians have expanded the information literacy program in upper-level and graduate courses in all colleges. Most sessions were in the traditional classroom, with additional personalized instruction provided by the Libraries’ reference services. In 2009, the faculty librarians worked with Learning Ventures to revise and expand eLibrary, a resource embedded in Blackboard, which provided online instruction on finding, obtaining, and evaluating resources, as well as information on getting help off-campus and requesting materials not available at the Libraries.

Information literacy learning objectives are updated on a continuous basis to reflect new pedagogies and to ensure compliance with accreditation and program revisions.
Directions 2011 identified information literacy as an area in which consistent learning objectives for all undergraduate courses that promote and assess inquiry and analysis, and the newly established College of Innovative Learning, of which the University Libraries is a part, is beginning to explore additional opportunities for students to develop information literacy skills.

VII. Learning beyond the classroom: Undergraduates

The University provides a variety of learning experiences beyond the classroom to give undergraduate students broad knowledge and skills within the context of discipline-specific skills. In addition, students continue to develop skills in intellectual inquiry, often within the context of their chosen field.

Honors College

To better serve its students, the University established the Honors Program in 1963, making it one of the earliest honors programs at a state university. In 2010, as part of the University reorganization, the program gained college status, exemplifying the University’s commitment to provide a foundation of knowledge and experiences leading to a lifetime of learning. More extensive information about the college is found in core component 3c.

Undergraduate research

The University is proactive in offering undergraduate research opportunities through the Office of Undergraduate Research. A full description of the program appears in core component 4a.

Research-intensive courses

Research also is integrated into the curriculum through “research intensive” courses. During the 2009-2010 academic year, the Faculty Senate approved criteria for research intensive courses. The courses must meet four criteria.

- Students must make serious attempts to advance and/or make significant contributions to the knowledge or understanding in the field of the investigation.
- Neither the students nor the instructor have a priori knowledge of the final result(s).
- The student investigators must present and/or disseminate their results to a wider audience than to just their class population.
- Summary course reports from instructors of research-intensive courses must be submitted to the Office of Undergraduate Research at the end of the semester the course is offered. In addition to the course reports, students enrolled in research intensive courses — after consulting course instructors — are highly encouraged to submit a written final report of their research projects to the Office of Undergraduate Research (OUR-UT).

Other opportunities for undergraduate students

- The Office of Academic Engagement, housed administratively in the Center for International Studies and Programs, promotes student success through unique, enriching learning opportunities offered by five programs — Study Abroad, National Student
Exchange, Camp Adventure, Washington Center Internship Program, Global Health and service learning and community outreach. These are described in more detail in core component 5b.

- Voluntary internships also facilitate learning outside the classroom. For example, a Kinesiology Department student completed an internship at Cincinnati Children’s Hospital Sports Injury Research Lab (biomechanics lab).

VIII. Learning beyond the classroom: Graduate students

While all graduate programs have intellectual inquiry as their core, the University provides opportunities for students to develop additional career skills.

Professional development programs

Workshops co-sponsored by the College of Graduate Studies, Graduate Student Association, Office of Career Services, Writing Center, and University Libraries introduce graduate students to the University and help them to become more effective teachers and researchers. Other program tracks include career development, graduate writing, and thesis and dissertation preparation (http://www.utoledo.edu/graduate/currentstudents/additionalresources/professionaldevelopment.html). Additional information, including a list of workshop titles, can be found in Appendix__.

Graduate assistantships

The University provides assistantships and internships to enhance the graduate student learning experience, facilitate degree completion, and prepare students for professional careers as future university and college faculty members. Graduate students are essential to the University's programs of research and scholarship. Graduate assistantships in teaching, research and administration are an important source of financial support to many graduate students and allow them to improve their independent learning skills. Students work directly with faculty or staff as an integral part of their education.

Assistantship opportunities include:

- Teaching assistantships. Many graduate students at the University teach as part of their education. In some cases, they instruct large introductory courses or are assigned to specific teaching support or related activities such as discussion sections, learning educational theory and techniques within the context of teaching in their discipline. Teaching experience aids graduate students in obtaining employment in some fields.

- Research assistantships. Research assistantships support students engaged in research activities under the supervision of a faculty member. Research assistants become proficient in laboratory techniques, learning research design and data collection, treatment, interpretation and reporting, and other aspects of conducting research. Some research assistantships occur in interdisciplinary settings that enable students to appreciate the importance of interprofessional collaboration in conducting research.

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• *Administrative assistantships.* Administrative assistants participate in the administrative duties assigned by supervisors.

• *Internships.* Several graduate programs provide paid internships with Toledo-area companies that give students opportunities to gain experience, to explore career fields and to establish relationships with professionals in their field of study.

**Support for scholarly activity**

Some travel funds are available for graduate students to attend professional state, regional and national conferences and present their scholarly activity.

- The Graduate Student Association (GSA) sponsors the Midwest Graduate Research Symposium every spring to provide a venue for students to present their work. ([http://sites.google.com/site/graduatesstudentassociation/information](http://sites.google.com/site/graduatesstudentassociation/information))

- The GSA also provides partial travel grants to students presenting their original research at conferences and other professional meetings. Traveling and presenting at conferences are valuable experiences for students and allow others to learn about the high quality of research and creative activities at the University.

- In addition, the College of Graduate Studies has local awards and national fellowships that are available to graduate students. ([http://www.utoledo.edu/graduate/currentstudents/additionalresources/externalopportunities.html](http://www.utoledo.edu/graduate/currentstudents/additionalresources/externalopportunities.html)  ([http://www.utoledo.edu/graduate/scholarships/current_awards.html](http://www.utoledo.edu/graduate/scholarships/current_awards.html))

**Other opportunities**

Graduate faculty members provide students with additional learning opportunities outside the classroom.

- A professor of curriculum & instruction offers students enrolled in an elective course in gifted education the opportunity to screen young children (K-3 grade) at Springfield Schools for giftedness and talent. ([http://www.utoledo.edu/education/departments/ecdue/](http://www.utoledo.edu/education/departments/ecdue/))  ([http://www.utoledo.edu/education/departments/ecdue/gifted_education_program.html](http://www.utoledo.edu/education/departments/ecdue/gifted_education_program.html))

  Students gain insights into strategies for meeting the educational needs of exceptional children and experience in making decisions about giftedness. In addition, undergraduate, master’s and doctoral students participate in summer programs for gifted children in grades 3 through 8 on Main Campus called GT@UT. Students gain experience in planning, advertising, marketing and implementing unique programs for advanced ability learners, while also engaging the UT community and local businesses in providing services for kids.

- An associate professor in foundations of education has arranged internships for students in research and measurement, working with him on one or more of the high-stakes health care certification boards. The students receive course credit and real-world experience to list on their vita. Of the four students who have participated, two of them are still engaged with these boards.
The chair of criminal justice and social work and a professor of political science co-facilitate the Inside-Out Prison Exchange Program between UT and the Toledo Correctional Institution. The program introduces prisoners and college students as equals in the classroom to discuss social and political topics for university credit. (http://www.toledoblade.com/Education/2010/12/13/Study-program-pairs-inmates-UT-students.html).

X. Learning beyond the classroom: Professional students

Like graduate programs, professional programs also have intellectual inquiry at their core, though they may focus more on the role of inquiry within the context of practice.

Learning with simulation

- In the College of Business Administration and Innovation, the simulation exercise Capsim immerses freshman in “Introduction to Business” (BUAD 1010) and seniors in “Senior Business Policy” (BUAD 4020) into a novel, experiential learning process. Students work together to make year-to-year strategic and functional decisions to accomplish business goals.
- The Interprofessional Immersive Simulation Center on Health Science Campus allows students to practice clinical procedures on adult and pediatric patient simulators. Use of simulators allows students from different colleges to work together as an interdisciplinary team and respond to simulated patient care situations and address real-world health problems.
- At the Ruth M. Hillebrand Clinical Skills Center (http://www.utoledo.edu/centers/csc/), which is described in detail in Criterion 3, students interact with standardized patients.

Clinical experiences

- Through the College of Law’s clinical legal education programs, law students develop legal skills while providing high-quality legal services to individuals and groups in the community. A fuller description of the College of Law’s clinical legal education programs can be found in core component 5b. (http://law.utoledo.edu/students/clinics/index.htm)
- In the College of Business and Innovation, the “Student Managed Portfolio Practicum” (FINA 4480) students manage a $1 million fund at the UT Foundation. Students generate investment ideas, research investment opportunities, analyze data and make investment recommendations.
- Students in health-care programs have required clinical requirements, where they integrate classroom learning with clinical skills in the care of patients or clients in a variety of settings. A description of the new affiliation between the University of Toledo and ProMedica Health System, Inc., that expands the opportunities for clinical health science education for University students appears in Criterion Two.

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Interprofessional opportunities

Since health-care professionals rarely practice alone, there has been an increased interest in interprofessional education. Health-care professionals in the future must be prepared to collaborate effectively with professionals in other disciplines. The University provides numerous opportunities for students to work in small groups during the course of their classroom experiences and clinical education.

- Beginning in 2010, first-year occupational therapy students and physical therapy students took neuroscience together. Central to the course is an assignment in which students work together to analyze research literature pertinent to a specific area of practice.
- Since 2007, occupational therapy and speech language pathology students have worked with children with autism spectrum diagnoses at Autism Society of Northwest Ohio’s extended school-year program.
- Students on Health Science Campus recently established the Interprofessional Organization of Healthcare Students. The group’s goal is to foster a collaborative atmosphere by increasing student understanding of the respective roles of health-care professionals in providing health care. The organization provides health information and screenings during community health fairs. http://iohsut.blogspot.com/
- The Community Care Clinic, held weekly at clinics for the underserved in Toledo and northwest Ohio, provides student volunteers an opportunity to discover societal issues that impact health status and practice principles of public health such as health promotion in an interprofessional setting. (http://www.utoledo.edu/studentaffairs/hsc/stulif/ccc.html)

Other opportunities

- The College of Medicine and Life Sciences doctor of medicine program incorporates clinical decision making skills in a course titled “Clinical Decision Making I,” where students work in small groups for case-based problem-based learning. Students interact with “a digital case” to make connections between the underlying pathophysiology, symptoms, and laboratory findings. Students identify information to better understand the case and research these learning issues between sessions, then discuss the information.

XI. Summary

The University understands the importance of a breadth of knowledge and skills as well as exercising intellectual inquiry to a life of learning. As a result, it makes these knowledge and skills integral to its educational programs. This is clearly demonstrated by both rigor and balance in required elements of a common curriculum, as well as the wide range of optional learning activities in all levels of education.

Current improvement processes include a review and revision of the core curriculum, the proposed redevelopment of the Writing Across the Curriculum to Communication Across the Curriculum, with possible adoption by colleges beyond the former College of Arts and Sciences.
The creation of the College of Innovative Learning is fostering the development of additional learning opportunities for students, including an enhanced information literacy curriculum and the establishment of additional learning communities to provide students with opportunities for interdisciplinary, challenge-based learning. In the future, the University will need to consider how best to support faculty who are engaging students in new ways — professional development sessions, changes in workload — so students receive the guidance they need to be successful.

Core component 4c: The organization assesses the usefulness of its curricula to students who will live and work in a global, diverse, and technological society.

The University of Toledo assesses the curriculum to ensure it prepares students to work in a global, diverse and technological society. Assessment of the effectiveness of the current curriculum is realized by ongoing processes in University colleges and programs. Diversity in the student body affords opportunities to learn about and appreciate one another in and out of the classroom. The University is composed of students from diverse ethnic, religious, and geographic and is a citizen of a diverse, urban community.

Assessment activities in the University include self studies, often conducted in the context of departmental and program accreditation, student course evaluations, student performance on in-class assignments, student performance on national course-related examinations, and survey of curricular offerings. Assessment activities for curricular programs completed by students include exit surveys upon graduation, performance data and pass rates on professional licensure examinations and job placement data. Global assessment of student programs is obtainable by analysis of alumni and employer surveys, rankings by public sources and evaluations by external peers.

I. Academic program review

The University assesses the curriculum to determine its effectiveness in preparing students for work in a global, diverse, and technological society. Assessment of the effectiveness of current curriculum is realized by ongoing University and college processes.

A task force on program prioritization was formed in spring 2003. The committee’s charge was to develop and implement criteria to be used for establishing academic program and university-wide support service priorities at the University that will be responsive and proactive to University needs as defined in the strategic plan. Forty-five associate degree programs and 10 master’s degree programs were reviewed for possible elimination, and several associate degree programs were eliminated.

During the 2005 Higher Learning Commission focused visit, program review and program prioritization were presented as strategies for addressing assessment, and during the 2005-2006 year, the colleges of Arts & Sciences, Business, Education, Engineering, Law, and University College completed a prioritization self study. A newly formed University Prioritization Committee’s final report in 2006 included recommendations for re-design, review, or elimination of 13 programs in three colleges — arts & sciences, business, and engineering.
One program was eliminated and a significant change was made to another. The merger resulted in structural and personnel changes that created a different framework for program review and prioritization. During fall 2010, the Office of the Provost, Office of the Registrar, and the Office of Institutional Research met with representatives from all colleges to confirm undergraduate, graduate and certificate programs. This was the first step in reimplementing a standardized, cyclical program review process.

Undergraduate programs received a template focusing on quality metrics — enrollment, retention, and institutional/community impact on the program — as well as institutional research to develop a baseline for each program. During summer 2011, an ad hoc faculty committee reviewed the undergraduate programs using a standard rubric to assess both the program benchmark reports and the template they were given. In addition, the committee was tasked with three assignments:

- Give advice and feedback to contribute to the development of a permanent process for program review;
- Provide the University with the ability to add program-level data on financial viability and sustainability to existing quality and effectiveness metrics; and
- Identify a cohort of programs, including programs identified in the 2006 program prioritization report, as potential candidates for the first-year cycle of program review.

A separate program review process took place for graduate programs. The College of Graduate Studies supports the University’s efforts and activities related to quality assurance of both faculty teaching and mentoring graduate students and curricular content.

The College of Graduate Studies Council and its committees ensure the quality and rigor of the graduate courses and graduate programs and the standards for membership in the graduate faculty. The Graduate Council is the administrative faculty body for graduate education and is composed of graduate faculty who are elected to serve as representatives of their colleges.

The faculty of each college develops and approves programs and courses according to their policies and procedures. Such proposed courses and programs are reviewed for approval by the Graduate Council Curriculum Committee. Their recommendations are brought before the Graduate Council for final University approval and submission, if appropriate, to the Regents’ Advisory Council for Graduate Study (RACGS) of the Ohio Board of Regents for state approval. Council members on the Membership Committee review and approve applications for graduate faculty status (full, associate I, associate II, adjunct and special status) and renewal of graduate faculty membership at seven-year intervals or less (special status), based on evidence of continued, quality performance in teaching and mentoring.

Currently, 44 percent of the 1,701 faculty members at the University is graduate faculty. From 2007 to 2010, the Graduate Council reviewed and approved six new programs, 151 new courses and modifications of 48 existing courses.

The Graduate Council establishes and reviews academic standards, grading policies and student academic grievance and due process procedures and policies, and thus helps to set a high ethical and responsible environment for student learning.
The College of Graduate Studies is charged with providing a system for periodic program review of its doctoral, masters and certificate programs. A program is refers to a focused and unique curriculum that leads to a degree. In many cases a degree can consist of several program options sometimes referred to as tracks or majors. The program review results inform improvement strategies and long-range planning. Program review helps to ensure the quality of each graduate program and thereby the appropriateness and rigor of the learning environment. Regular cycles of review were halted in 1999; the review process was re-initiated for both undergraduate programs and graduate programs with the completion of the merger and the new Directions 2011 strategic plan.

The College of Graduate Studies developed program review procedures for doctoral program review that began in academic year 2010-2011. The masters and certificate program review began in summer 2011. All graduate programs will have an initial baseline review that will serve as a comparison to future cyclic in-depth reviews. A cyclic schedule of ongoing graduate program review will coordinate with that of undergraduate program review for purposes of efficiency. The process for graduate program review is designed to ensure transparency, include checks and balances for accuracy, and is congruent with Graduate Faculty Constitution and Graduate Council by-laws. The dean of the College of Graduate studies coordinates collection of the data from various sources, including the colleges, Office of Institutional Research and College of Graduate Studies.

The Graduate Council Program Review Committee is comprised of graduate faculty representatives of each graduate college. Once charged by the dean of the College of Graduate Studies, the committee develops a matrix to assign evaluation outcomes to the program data. The committee reports its findings to the College of Graduate Studies dean who in turn reviews the findings with the college deans for purposes of clarification.

The College of Graduate Studies dean prepares the final report for presentation to the chancellor and provost with ultimate presentation to the president and board of trustees.

Student learning is also enhanced through financial support from the College of Graduate Studies. For 2009-2010, as an example, the College of Graduate Studies provided more than $5.2 million in stipends to 555 graduate students in eight colleges, in addition to xx teaching assistants, xx residence assistants, and xx graduate tuition scholarships and xx fellowships.

The college also provides financial resources for student travel to regional and national/international meetings to present the results of their studies, graduate student annual research forums, and activities of the Graduate Student Association and Council of Biomedical Graduate Students. Finally, the learning environment is enhanced by workshops for students, including workshops devoted to professional development and to academic ethics and responsible conduct of research training.

The process for a seven-year program review cycle was developed over the summer of 2011, based on feedback on the benchmark template and rubric. The seven-year cycle of program review includes some parallel processes for both undergraduate and graduate programs, and the first-year cycle is scheduled to launch by Oct. 15, 2011.
Assessment activities include:

- Self-studies, often conducted in the context of departmental and program accreditation;
- Student course evaluations;
- Student performance on in-class assignments;
- Student performance on national course-related examinations; and
- Surveys of curricular offerings.

Assessment activities for curricular programs completed by students include:

- Exit surveys upon graduation;
- Performance data and passage rates on professional licensure exams; and
- Job placement data.

Global assessment of student programs is obtainable by:

- Analysis of alumni and employer surveys;
- Rankings by public sources; and
- Evaluations by external peers.

Some students are prepared for work through involvement in organizations and campus events, internships, externships, co-ops, field assignments, undergraduate research opportunities, and various other work-experiences, as well as purposeful living-learning communities. Assessment methods include surveys of the number and scope of career-oriented organizations and activities, employer evaluations of work-site experiences, program evaluation, and quantification of student participation in community, regional, and national career-relevant events.

II. Learning goals, outcomes, include skills, professional competence essential to diverse workplace

A growing cosmopolitan, international learning atmosphere and environment exists at the University that helps prepare students to live and to work in a global society. They attend classes with students from many other countries. In 2010, of 23,085 enrolled students, 5.5 percent were international, up 0.7 percent from 2007. Data from 2007-2010 is shown in Table 4.5.

Table 4.5: International students

<table>
<thead>
<tr>
<th>Table: International students</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
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<tr>
<td>% International undergraduate students</td>
<td>2.5</td>
<td>2.7</td>
<td>3.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Number international undergraduate students</td>
<td>413</td>
<td>475</td>
<td>544</td>
<td>580</td>
</tr>
<tr>
<td>Total number undergraduate students</td>
<td>16,527</td>
<td>17,591</td>
<td>18,140</td>
<td>18,130</td>
</tr>
<tr>
<td>% International graduate students</td>
<td>12.9</td>
<td>12.9</td>
<td>13.9</td>
<td>14.1</td>
</tr>
<tr>
<td>Number international graduate students</td>
<td>592</td>
<td>612</td>
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<td>699</td>
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<td>Total number graduate students</td>
<td>4,592</td>
<td>4,745</td>
<td>4,924</td>
<td>4,955</td>
</tr>
<tr>
<td>Total number students</td>
<td>21,119</td>
<td>22,336</td>
<td>23,063</td>
<td>23,085</td>
</tr>
<tr>
<td>% International students</td>
<td>4.8</td>
<td>4.9</td>
<td>5.3</td>
<td>5.5</td>
</tr>
</tbody>
</table>
Students have numerous opportunities to gain the skills and experience that promote global citizenship. A few examples follow:

- Undergraduate students in the former College of Arts and Science were required to prove proficiency through the fourth semester (intermediate II) in a language other than English. The department of foreign languages offers courses in Arabic, Chinese, French, Latin, German, Japanese and Spanish. The language department has created programs and courses designed to accommodate students in other colleges. A course in Spanish prepares medical students for medical missions and work in domestic Spanish-speaking areas. Courses in French, German and Spanish are targeted for business students. Multicultural courses in culture and commerce are offered in English for Arabic, French, German, and Spanish-speaking cultures.

- Programs address global issues in ways that are appropriate for the discipline. For example, a program objective for the Department of Chemical and Environmental Engineering is to provide “the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.” The sociology program “is committed to enabling students (major and non-majors alike) to see beyond their limited view of the world to society as a whole — the values and ideas shared by its members, the groups and institutions that compose it, and force that changes it — understanding the ‘Sociological Imagination.’”

- Opportunities exist for students to study abroad in more than 50 countries and expand their understanding of world cultures. The University is one of 33 members in the non-profit University Studies Abroad Consortium (USAC) [http://usac.unr.edu/](http://usac.unr.edu/) and holds one of its nine board of director positions. Through USAC, UT students have access to 39 programs in 24 countries. The consortium helps make possible an affordable educational experience for students in a variety of locations with programs crafted for academic excellence. The position on the board of directors affords priority for UT students and faculty to participate in the programs. Since the last accreditation visit, the consortium has increased the number of programs and expanded into new countries and even continents. Students and faculty now have opportunities to work and study in Ghana, India, Ireland, Malta, in addition to countries previously included. Also since the last visit, opportunities for internships through the consortium have increased as has financial support for students to participate.

- The Office of Academic Engagement administers the International Education Financial Aid Fund (IEFAF) which provides partial travel grants for eligible undergraduate and graduate students ([http://www.utoledo.edu/utlc/engagement/studyabroad/index.html](http://www.utoledo.edu/utlc/engagement/studyabroad/index.html)). The same office also manages National Security Education Program (NSEP) grants.

- The College of Business and Innovation encourages its students to participate in the USAC program and take business, non-business, and language courses in other countries ([http://www.utoledo.edu/business/StuServ/Study_Abroad.html](http://www.utoledo.edu/business/StuServ/Study_Abroad.html)).

- Participation in Study Abroad allows students in the College of Business and Innovation to gain hands-on, practical global experience for today’s global marketplace.
University of Toledo has partnered with various consortia to include University Study Abroad Consortium (USAC), International Studies Abroad (ISA) GlobaLinks Learning Abroad – AustraLearn / AsiaLearn / EuroLearn, and Semester at Sea. These partnerships allow students the opportunity to study at top-ranked, international universities throughout the world. A few of the college’s most popular sites include Torino, Italy; Bilbao, Spain; Gold Coast Australia; Copenhagen, Denmark; Shanghai, China; Luneburg, Germany; and Puntarenas, Costa Rica. All College of Business and Innovation students, regardless of their intended major(s), are strongly encouraged to study abroad throughout their undergraduate degree program. Study abroad programs assist students in the development of academic, intellectual, personal, professional, and cross-cultural skills. Students may choose to study abroad over a traditional fall or spring semester, over non-traditional, intensive summer sessions, or throughout the full academic year. Students typically enroll in a combination of upper-level business courses and core curricular courses (taught in English). Elementary, intermediate, and upper-level foreign language tracks are also available; multiple courses may be completed in only one semester (particular programs determine language requirements). Foreign language proficiency prepares students for international internship opportunities. Additionally, the college offers 10-day, faculty-led, international intensive immersion trips to Eastern Europe, Western Europe, and Asia throughout the academic year (to include summer semester). Intensive immersion opportunities vary from year to year.

- The University received funding in 2008 from China to create the Confucius Institute that has welcomed a co-director and three instructors per year who work with university students and area schools to promote familiarity with Chinese language and culture. ([http://www.utoledo.edu/offices/ogi/Confucius_Institute/index.html](http://www.utoledo.edu/offices/ogi/Confucius_Institute/index.html)).
- In the Department of Military Science and Leadership (Army ROTC), students have participated in international cultural exchanges in which they assist foreign military personnel with humanitarian relief and participate in internships at overseas U.S. military bases and in Project GO (which includes language instruction and two to three weeks of international experience).
- In May 2011, the chair of the Department of Foundations of Education taught a course, “Philosophical and Global Issues in Peace Education,” a one-week intensive course in Costa Rica held at the UN-mandated University of Peace.
- The University welcomes international students and facilitates their studies here through the Office of International Student Services ([http://www.utoledo.edu/utlc/international/](http://www.utoledo.edu/utlc/international/)).
- Domestic and international students reside and interact in the International House residence hall.
- Societies for international students are active on campus, including the African People’s Association, Arab Student Union, Chinese Student Union, Filipino American Association, Indian Students Cultural Organization, Japanese Student Association, Nepalese Student Association, Saudi Club, Korean Student Association, International Student Association, Arabesque and Vietnamese Student Association. These groups host events that increase cultural awareness. As an example, the Indian Student’s Cultural Organization celebrates festivals such as Diwali, Ganesh Chaturthi, Navarathri, Baisakhi, and Holi.
Colleges have established relationships with foreign learning centers that expand and enrich potential learning opportunities for University students and bring international students to the University. These programs also raise the University's visibility across the nation and the world. Table 5 outlines the University’s high-quality foreign educational agreements.

Table 4.6. International educational agreements

<table>
<thead>
<tr>
<th>UT Program</th>
<th>International Organization</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Natural Sciences and Mathematics</td>
<td>University of Salford Manchester, England</td>
<td>Exchange of students</td>
</tr>
<tr>
<td>College of Business and Innovation</td>
<td>Egypt, India, Germany</td>
<td>Exchange of graduate scholars.</td>
</tr>
<tr>
<td>College of Law</td>
<td>Szeged University, Szeged, Hungary</td>
<td>Exchange of graduate scholars.</td>
</tr>
<tr>
<td>College of Pharmacy and Pharmaceutical Sciences</td>
<td>Szeged University, Szeged, Hungary</td>
<td>Exchange of internship opportunities for undergraduate and graduate students in pharmacy. <a href="http://www.utoledo.edu/pharmacy/about/index.html">http://www.utoledo.edu/pharmacy/about/index.html</a></td>
</tr>
<tr>
<td>Occupational Therapy Program</td>
<td>Karolinska Institute of Stockholm, Sweden</td>
<td>Fieldwork experience</td>
</tr>
<tr>
<td>Physical Therapy Program</td>
<td>Szeged University</td>
<td>Exchange of internship opportunities in physical therapy</td>
</tr>
<tr>
<td></td>
<td>Szeged Hungary</td>
<td></td>
</tr>
<tr>
<td>MD Program</td>
<td>Six sites, including hospitals in Jordan, China, India, and Zambia</td>
<td>Global health clerkships</td>
</tr>
</tbody>
</table>

The agreement between the University and Salford has been particularly fruitful and productive, dating back to 1984 and involving UT’s Department of Biological Sciences and Salford’s School of Environment and Life Sciences. More than 400 students have participated. Many honors students participate in the program, which has a 100 percent placement rate in graduate/professional programs. [http://journals.utoledo.edu/spann/2011/07/14/molecular-exchanges-a-blog-exchange/](http://journals.utoledo.edu/spann/2011/07/14/molecular-exchanges-a-blog-exchange/)

The importance of the University’s global engagement will only grow in the future, particularly as Toledo political, business and civic leaders look to the University for help in attracting...
international investment to the city and new sources of economic growth from countries such as China and India.

**Preparation for a diverse society**

The President’s Council on Diversity (http://www.utoledo.edu/diversity/council/index.html), the Office of Institutional Diversity (OID), http://www.utoledo.edu/offices/oid/index.html and the Office of Equity and Diversity (http://www.utoledo.edu/diversity/oed/) provide campus leadership on issues of diversity. This support extends to students through both curricular and co-curricular activities. Understanding of diversity issues is accomplished through general education requirements, and activities of departments, centers, offices, student organizations, and partner organizations in the community:

- As part of the general education requirements, undergraduate students are required to take one Western and one non-Western multicultural course. They are also required to take at least six credit hours each in courses related to humanities and social sciences.
- “Building a Culture of Diversity: UT and You,” is one of the required modules for all sections of Beginning the Academic Journey.
- The Department of Philosophy includes in its learning outcomes, “Students should demonstrate awareness of and ability to understand and interpret the social and political effects of philosophical thought and ethical decision-making in an integrated, global setting. Students should demonstrate an awareness of issues surrounding racial, ethnic, cultural, physical, cognitive, linguistic and economic differences. In the Music History Program, “students will demonstrate an understanding of multiple cultural perspectives in music, as well as diversity of musical influences within one style.”
- The Eberly Center for Women, which is administered by the Office of Equity and Diversity, sponsors classes and lecture series related to issues impacting women and gender issues in general.
- The Initiative for Religious Understanding (IRU), a project sponsored by the University’s Program of Religious Studies, has featured talks by noted religious leaders and proved to be an excellent vehicle to enhance religious literacy and introduce the idea of interreligious dialogue. The IRU sponsors many events throughout the year, including the annual Gandhi lecture on Peace and Non-Violence, the Jewish-Christian-Muslim Dialogue, the Markowicz Lecture on Ancient Judaism and Jewish Biblical Studies, the Imam Khattab Lecture on Islamic Studies, the Murray/Bacik Lecture on Catholic Studies, and the annual Lecture on Eastern Thought. (http://www.utoledo.edu/as/philosophy/religious/index.html)
- Faith Matters, produced with Toledo public broadcasting station WGTE, is a miniseries that addresses contemporary religious issues. http://www.wgte.org/wgte/watch/index.asp?page_id=767
- The University has an endowed chair in disabilities studies, and in addition to curricular offerings, the Disability Studies Program has sponsored co-curricular programs to increase awareness of disability, not as medically defined, but as a sociocultural

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phenomenon, focused on the contributions, experiences, history, and culture of people with disabilities regionally, nationally, and internationally. 
(http://www.utoledo.edu/as/disability/index.html)

- The University supports diversity awareness programs, primarily under the auspices of the Office of Multicultural Student Services. In addition to educational programming, the office also provides support services to student groups (http://www.utoledo.edu/studentaffairs/omss/).

**Preparation for technological society**

The University offers numerous opportunities for students to learn about and use current and emerging technologies. The infrastructure of the University supports student use of modern technologies, and degree programs require and provide professional experience with cutting-edge technology. For example:

- The Department of Art provides digital instruction through the bachelor of fine arts in new media studies and the bachelor of arts in new media design practices. The bachelor’s in fine arts degree offers technological coursework and historical and theoretical discourse for students seeking careers as practicing artists. The bachelor of arts in new media design practices features use of computer and photographic technologies in a “practice learning” degree structure. Through interaction with emerging technologies and engaging with work from the experimental to the mainstream, students in the bachelor of arts degree in film and video utilize current technologies and investigate the historical and theoretical impact on the mediated arts. Students in the film and video programs integrate knowledge and creative expression through collaborative works with theatre students and faculty.

- The College of Engineering provides cutting-edge technology and training to graduate and undergraduate students. For example, undergraduate students in the Department of Bioengineering are required to take “Bioprocessing Laboratory” (BIOE 3500) to learn techniques used in biological manufacturing of compounds used in pharmaceuticals, agriculture or biofuels applications.

- Based upon feedback of students and graduates, the Department of Geography and Planning provides more technically oriented courses, degrees with a concentration in geographic information systems (GIS), and a graduate certificate in GIS. This has been facilitated by the Center for Geographic Information Sciences and Applied Geographics. (http://www.utoledo.edu/as/geography/facilities/gisag.html)

**IV. Curricular evaluation involving alumni, employers, external constituents**

Curriculum review and revision is the purview of the faculty, based upon their disciplines’ requirements. Colleges and departments have developed assessment plans that include not only how student learning is assessed, but how the program itself, including the curriculum, is assessed.

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Colleges and departments determine their own structure and process for curriculum review. Programs may rely upon recommendations of professional organizations to guide curricular decisions, benchmarks from similar programs or feedback from stakeholders. Most programs report relying on a combination of practices.

Depending upon the impact of proposed changes, they may be implemented within the program or, if the changes will have an impact on programs in multiple colleges, they may be brought to the Faculty Senate Committee on Undergraduate Curriculum for consideration. The Graduate Council has a similar committee.

Many programs are accredited by external agencies and are routinely subjected to program evaluations. Examples of externally accredited departments and programs in the former College of Arts and Sciences included art, chemistry, music, and political science. These accredited programs have received praise for the quality of programs and to the dedication and leadership of faculty and staff. Many programs in the College of Nursing, College of Law, College of Medicine and Life Sciences, Judith Herb College of Education, Health Science and Human Service, College of Pharmacy and Pharmaceutical Sciences, and the College of Engineering are externally accredited and meet stringent guidelines for assessment.

**Recommendations from professional associations**

University programs that are not subject to external accreditation may use curricular recommendations and standards from professional associations to guide curricular decisions. For example, the Department of Environmental Sciences’ curriculum matches that recommended by the Canadian University Environmental Science Network. The Department of English Language and Literature consults standards from the International Council of Teachers of English. The curricula in teacher education programs in the Judith Herb College of Education, Health Science and Human Service are subject to accreditation standards through NCATE and abide by State of Ohio metrics.

**Analysis of student performance on licensure/certification examinations**

A number of University programs lead to certification or licensure, including, but not limited to, law, medicine, nursing, occupational therapy, pharmacy, physical therapy, physician assistant studies, and respiratory therapy. These programs include professional practice courses that ground students in the professional expectations of their disciplines. One indicator of the high quality of these programs is the high pass rates of graduates on licensure examinations.

**Analysis of graduate placement**

Another measure of the quality of the University’s educational programs is the success of graduates in finding employment or in pursuing further educational goals. Reports of such information are best exemplified by the departments of Biological Sciences, Geography and Planning and Astronomy.

Student success after graduation is recorded in different ways. The Judith Herb College of Education, Health Science and Human Service reported that recent graduates in the Counselor Education and School Psychology program were employed at 43 different sites. All students in
the school psychology program who sought school psychologist positions in school settings attained one. In the last 10 years, 100 percent of all graduates from the College of Pharmacy Doctor of Pharmacy program have found employment.

**Graduate/alumni surveys**

Many programs assess the relevance of their curricula by surveying recent graduates. The surveys address issues such as where graduates are currently working or furthering their education, how well the programs prepared them for their careers or additional education, and parts of the curriculum that were successful and which need improvement. Some programs survey recent graduates, some conduct surveys of all alumni every five years, and programs may also conduct exit interviews/surveys with students right before graduation. In addition to more formal procedures such as surveys and interviews, some colleges and programs, such as the College of Law, use informally gathered feedback from alumni events.

**Preceptor, fieldwork supervisor, co-op employer, and employer surveys**

Programs also rely on feedback from student supervisors — preceptors, fieldwork supervisors, and co-op employers — as well as current employers asking them to assess the knowledge and skills of the student or employee. Programs use this information to inform curricular development. For example, the Chemical & Environmental Engineering Department analyzes data according to ABET (formerly the Accreditation Board for Engineering and Technology) outcomes, and uses that analysis to guide changes to their curriculum. 

(http://www.utoledo.edu/offices/provost/main/assessment/pdfs/Engineering.pdf)

**Advisory councils**

Advisory councils, another assessment tool, are made up of practicing professionals who are not from the University and who provide valuable input regarding the knowledge and skills that graduates need to work in a global, diverse and technological society. These professionals provide feedback and suggestions regarding curricula. A number of programs have advisory councils: athletic training, criminal justice, occupational therapy, physician assistant studies, pharmacy practice, and respiratory care. The faculty in the Health Promotion and Human Performance Program utilized their advisory council as they developed the new program.

**VIII. Summary**

- The University prepares its students to live and work in a global, diverse, and technological society.
- From the diverse, international aspects of the University community to curricular and co-curricular activities, students learn the skills they need to live and work in today’s society.
- With a renewed commitment to developing a culture of assessment, the University has better documented the processes used to assess curricula for relevance to societal changes.

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• The Directions 2011 strategic plan underscores the importance of curricular and co-curricular opportunities for students to develop the knowledge and skills to be successful in a global, diverse, and technological society.

• The University has a strong base from which to develop these opportunities, and continued development of relationship with current and new partner organizations is needed

Core component 4d: The organization provides support to ensure that faculty, students, and staff acquire, discover, and apply knowledge responsibly.

The University takes seriously its responsibility for teaching about and monitoring the responsible acquisition, discovery, and application of knowledge by faculty, students, and staff as evidenced by policies, administrative oversight, education, and appropriate intervention with those who violate academic integrity and research policies. As a result of the merger, the harmonization of policies between the former institutions has strengthened the research integrity education and compliance programs on all campuses.

I. Compliance oversight

The University’s Compliance Office, www.utoledo.edu/offices/compliance, “is responsible for coordinating and monitoring the Compliance Plan to ensure compliance with federal, state and local laws and regulations as well as University policies. The office was established to continue the University’s commitment to adhering to the highest standards of ethics, integrity and responsibility.”

Compliance with laws and University policies is monitored via individual departments in coordination with the Compliance Office. Employees are encouraged to report non-compliance. For example, the Employee Compliance Manual instructs that it is “every employee’s responsibility to report concerns … if illegal or unethical policy is suspected.” Reports can be made through various channels, including via Ethics Point, an anonymous toll-free hotline. Possible non-compliance issues are investigated by the Compliance Office. If non-compliance is identified, the department and the Compliance Office collaborate to develop and implement a corrective action plan. Discipline for non-compliance can include termination of employment.

The Employee Compliance Manual, www.utoledo.edu/offices/compliance/pdf/Employee_Compliance_Guide3fina.pdf, applicable to all faculty and staff, includes standards of conduct and a statement of ethical principles.

The Compliance Plan, www.utoledo.edu/offices/compliance/pdf/Compliance_Plan_-fully_execut.pdf, developed in 2006, sets forth a framework for ensuring legal and ethical compliance by the University and its employees. The plan outlines a program for education and training, monitoring and auditing, reporting and investigating, corrective action, and enforcement and discipline. The Compliance Office provides education and training on laws and University policies both on-line and in person. Its Web site includes important compliance information, and its personnel make presentations on compliance issues during new employee orientations and group training sessions. For example, the Compliance Office provides information and coordinates training regarding the Health Insurance Portability and Accountability Act (HIPAA)
II. Academic integrity of faculty and staff

Faculty at the University must maintain the highest standards of academic integrity and professional conduct. The University Faculty and Instructional Staff Policy applicable to Main Campus (www.utoledo.edu/policies/academic/faculty_staff/pdfs/ii_1.pdf) and the Faculty Rules and Regulations on the Health Science Campus set forth acceptable and unacceptable behavior. www.utoledo.edu/policies/academic/faculty_staff/pdfs/rules_regulations.pdf.

III. Academic integrity of students

The University sets high standards of academic integrity for its students and devotes considerable time and resources toward ensuring that students attain and maintain such standards. The basis for students is the University’s policy on academic dishonesty, which was most recently reaffirmed in February 2010. Academic integrity is reinforced at the college and department levels. The Main Campus Graduate Student Handbook (http://www.utoledo.edu/graduate/files/Graduate_Student_Handbook_2009.pdf) and the Health Science Campus Graduate Handbook (http://www.utoledo.edu/graduate/hsc/hsc_handbook10/Student_Code_of_Ethics.html) include language from this policy. In addition, colleges and programs have developed their own codes of conduct setting forth specific expectations for students in their disciplines, which include definitions and examples of academic dishonesty. These policies and codes of conduct include information about consequences of academic dishonesty, including and up to expulsion from the University. These include the College of Business and Innovation Code of Student Academic Conduct (www.utoledo.edu/business/COBA/COBADocs/CodeofAcademicConduct.pdf), College of Nursing Professional Conduct Guidelines (www.utoledo.edu/nursing/pdfs/Professional_Conduct.pdf), College of Medicine and Life Sciences Standards of Conduct (http://www.utoledo.edu/policies/academic/college_of_medicine/pdfs/Stand%20of%20Conduct%20Discipy%20%26%20Due%20Process%20Appeals%20of%20%20364-8.pdf) and the College of Law Code of Student Professional Conduct (http://law.utoledo.edu/students/handbook/conduct.htm).

In addition to these statements in official University documents, students also learn about academic dishonesty and how to avoid it in many venues:

- During orientation sessions.
- In “Beginning the Academic Journey” (www.utoledo.edu/utlc/baj), a required first-year course for all direct-from-high-school students. One of its required online modules stresses the importance of academic integrity. The module, “I’m Not a Cheater,” covers such topics as the University’s policy on academic dishonesty, how to properly use source material and avoid plagiarism, and the problems of cheating in and beyond college.

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The Writing Center conducts class presentations that include information about plagiarism and how to avoid it.

The University Libraries provide instruction and help material on plagiarism and appropriate citation methods.

The English Department requires every course syllabus to include a statement about plagiarism and describe strategies for addressing it.

The University offers several options for training undergraduate and graduate students about the ethical conduct of research. A course entitled “On Being a Scientist” (INDI 602/802) is offered in the fall and spring semesters. The course covers the ten focus areas recommended for ethical research training by the Office of Research Integrity, Department of Health and Human Services. A summer seminar series entitled “Issues in Research and Scholarship” (ARS 2980) covers the same topics.

In the College of Visual and Performing Arts, many courses include information about legal and ethical uses of others’ work, including, but not limited to “Perspectives on Theatre (THR 2200); “Orientation Music Majors” (ARS1000);”Jazz Arranging and Composition (MUS3650) and “Film/Video Workshop (FILM 4320)

Instruction about related ethical and professional issues is woven into courses offered throughout the University. Specific courses focusing on ethics include “Professional Development” (BIOE 1010) in the College of Engineering; “Legal and Ethical Environment of Business” (BUAD3470) in the College of Business Administration and Innovation; “Legal Ethics and Professional Responsibility” (LAWA 9000) in the College of Law; and “Topics in Medical Ethics” in the College of Medicine and Life Sciences.

Faculty resources to help with detection of plagiarism include:

- SafeAssign, a tool in BlackBoard that detects unoriginal content in student writing assignments;
- Faculty workshops on how to prevent, address and detect plagiarism had been offered by the Center for Teacher and Learning.
- Some colleges and programs such as the College of Law and the Judith Herb College of Education, Health Science and Human Service also provide plagiarism detection software such as Turnitin to their faculty.
- Teaching assistants receive training on academic dishonesty during their orientation.

IV. Responsible acquisition and discovery of knowledge

Integrity in research and scholarship is a fundamental value upon which the University is founded. UT has a detailed policy setting standards for the responsible and ethical conduct of research and scholarship by faculty, staff and students. Matters addressed by the “Responsible Conduct of Scholarship and Research Policy,” [http://www.utoledo.edu/policies/academic/research/pdfs/3364_70_02.pdf](http://www.utoledo.edu/policies/academic/research/pdfs/3364_70_02.pdf), include scholar responsibility, quality of research, authorship, training in ethics, and specific issues relating to scientific research.

The 2006 merger between the University and MUO brought significant changes and improvements in research compliance for the institution. All areas of research compliance were Criterion Four Acquisition, Discovery, and Application of Knowledge

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brought under the authority of the Office of Research and Sponsored Programs (RSP), which plays an essential role in ensuring that faculty, students and staff acquire, discover and apply knowledge responsibly. The RSP office oversees research and scholarly activities that use University resources, services or personnel to assure adherence to federal, state and local laws as well as University policies. It also manages the following committees/functions: research with human subjects and the Institutional Review Board (IRB), Institutional Animal Care and Use Committee (IACUC), the Financial Conflict of Interest Committee, Institutional Biosafety Committee (IBC), the Radiation Safety Committee, and research misconduct investigations. All UT research policies and procedures can be found in the research section of the UT policy website: [http://www.utoledo.edu/policies/academic/research/index.html](http://www.utoledo.edu/policies/academic/research/index.html).

In 2010, the National Science Foundation (NSF) required that a proposing institution have a plan to provide appropriate training and oversight in the responsible and ethical conduct of research (RCR) to undergraduates, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research. Concurrently, the National Institutes of Health (NIH) requires similar training for students and post-doctoral fellows supported by NIH training grants. To address this need, the online RCR training module by Collaborative Institutional Training Initiative (CITI) was licensed by RSP. The training covers several topics.

The University’s local National Science Foundation-Responsible Conduct in Research Committee that selected the CITI for initial short-term use also recommended a longer-term goal of establishing an in-house RCR curriculum comprised of lecture, small group discussion, case studies, and video vignettes [http://www.utoledo.edu/graduate/files/RCR_NSF_NIH_presentation.pdf](http://www.utoledo.edu/graduate/files/RCR_NSF_NIH_presentation.pdf).

**Conflict of interest**

The University’s responsibilities in education, research and clinical care must not be compromised by conflict of interest or the appearance of conflict, because even perceived conflicts can undermine the credibility of academic and clinical functions. All employees of the University of Toledo are held to the provisions of the Ohio Revised Code that limit conflicts of interest. In addition, to maintain academic and clinical integrity, the College of Medicine and Life Sciences has proposed a policy that will provide a rigorous and comprehensive conflict of interest oversight program. Conflicts of interest in research are a particular concern. A Universitywide policy requires disclosure of potential conflicts of interest from all participants in sponsored research annually. Disclosures of financial interests in companies in excess of $10,000 or 5 percent ownership (as defined by federal regulations) are referred to the Financial Conflict of Interest Review Committee. Financial conflicts of interest must be eliminated or managed before principal investigators are allowed access to sponsored program funding.

A recent example of the committee in action involved a faculty member who was awarded a grant for a clinical trial from the National Institutes of Health. The trial was centered on technology developed by the faculty member and licensed to a start-up company in which he had a significant financial interest. A successful trial would be highly beneficial to the start-up company. To manage this conflict of interest, the committee recommended that the faculty member not be allowed to participate in data analysis or preparation of any manuscripts.
describing the results of the study. Rather, an authorship committee, comprised of trial participants with no equity in the start-up company, would analyze the data and prepare all manuscripts (memo from James Trempe, Research Integrity Officer & chair of Financial Conflict of Interest Review Committee, 4/9/10). The UT individual conflict of interest policy can be found at: http://www.utoledo.edu/policies/academic/research/pdfs/3364_70_01.pdf.

**Human subject research**

The Department for Human Research Protections (DHRP) oversees human subject research activities involving University faculty, students, and staff members. This oversight includes the Human Subject Research (HSR) education process, the research application process from the initial submission to the final determination by the Institutional Review Board (IRB), as well as the regulatory compliance issues for the Biomedical IRB and the Social, Behavioral & Educational IRB.

As a result of the merger between the University and MUO, a new DHRP was created. After a thorough review of all processes, policies and procedures, and aligning two independent IRBs with significantly different focuses and operations, DHRP now provides centralized administrative and regulatory oversight for the combined campuses. With enhanced capabilities and resources, the DHRP has initiated an institutional educational initiative and established new procedural standards. Since the merger, DHRP has provided more than 100 presentations for faculty and students on the updated policies and procedures.

The DHRP has initiated an institutional education initiative via a Web-based program called CITI training. The new human-subjects program targets topics specific to the individual researcher’s area of study. In addition, the DHRP staff now provides administrative support for the biomedical and social behavioral and educational IRBs. To meet the expanded oversight and to increase access for researchers and students, DHRP has developed a comprehensive Web page that addresses federal regulations, training, student and researcher guidance, submission documents, and institutional policies.


To insure compliance with University and federal policies, DHRP conducts random human subject research compliance support visits. The visits and associated forms are designed to:

- Assist researchers with their regulatory compliance responsibilities by reviewing study records and providing relevant regulatory guidance if needed;
- Ensure that researchers are following their IRB-approved protocols by reviewing the protocol and comparing it to study records;
- Verify all research team members are IRB approved (and thus have completed IRB required research and ethics training) by reviewing the study records, consent forms (signature of person obtaining consent), and asking the principal investigator who is involved;

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• Examine signed consent forms to ensure only IRB approved forms are utilized when enrolling subjects;
• Examine consent forms utilized in the study for completeness, and compare the date and time of signature to the date and time study procedures began;
• Review recruitment and advertising materials, if any, and determined whether they are IRB approved;
• Review amendments, progress reports, and any adverse event reports and confirm they have been reviewed and approved or acknowledged by the IRB;
• Improve the quality of research by detecting deviations or omissions from IRB-approved protocols and procedures and providing direction on any necessary corrections; and
• Provide investigators with an opportunity to ask questions and receive information regarding regulatory and institutional requirements for the protection of human subjects.

For-cause audits are conducted when there is a specific concern of non-compliance with either federal regulations or IRB procedures. Any serious problems found during a compliance support visit or audits are referred to the DHRP’s Compliance Oversight Review and Evaluation (CORE) Committee for further investigation. A CORE report is then presented to the convened IRB which decides whether appropriate corrective action is required. The following are a few examples of actions taken by the IRB committee that illustrate the University’s commitment to compliance:

• Identified a situation where a study team member signed as a witness to the consent process when ICH guidelines require an impartial witness. The study team was educated regarding the guidelines.
• Study subjects signed IRB consent forms without IRB approval stamps and validation dates, which is a violation of IRB policy. The use of stamped consent forms helps the study team to ensure that they are only using the most current, IRB-approved version of the consent form. Study staff explained they were printing their own forms due to the color logo on the form. We explained the policy and purpose, and study staff agreed to make copies of the IRB-stamped consent form.
• A principal investigator who was not yet approved by the IRB as study staff due to not having completed human research protections training and education consented one subject for enrollment. The IRB identified this during the audit of consent forms. At the request of the IRB, a follow up audit was conducted after the enrollment of several additional subjects, which showed that all individuals obtaining consent were IRB approved and trained.

**Animal research**

The Institutional Animal Care and Use Committee (IACUC) works to ensure that all research teaching, and training protocols at the University using live animals are designed and carried out in a humane manner that complies with all applicable laws and guidelines. Required IACUC members include a chairperson, a veterinarian with program responsibility and authority in the animal research program, practicing scientists experienced in research involving animals, a member whose primary concerns are in a nonscientific area, and a member who is not affiliated with the institution in any way other than as a member of the IACUC. In addition, the University’s committee also has members who are not required by regulations: a biostatistician and the associate director of the vivarium. All IACUC members are required to take online training (CITI). Research involving animal subjects cannot be initiated at UT without an approved IACUC protocol, which uses the standard recognized by federal enforcement agencies.9

[Link to two-paragraph narrative in electronic resource room that describes self-assessment of animal research program.]

A recent example of the University’s commitment to responsible research is in the accrediting process for the Department of Laboratory Animal Research (DLAR). The DLAR operates a vivarium on the Health Science Campus that has been accredited since the 1980s by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC), a non-profit organization whose accreditation is the “gold standard” for animal care and use programs. Following the merger in 2006 and the creation of a University-wide IACUC, significant efforts were made to upgrade the animal research programs and facilities on all University campuses, with the goal of achieving AAALAC accreditation University-wide. In October 2010, an AAALAC assessment team reviewed all five different animal facilities located at the Lake Erie Center and the Health Science and Main campuses. During the exit interview, the team members said they would recommend full accreditation for the animal research program universitywide. Full accreditation was officially received on Feb. 24, 2011. Policy and regulation training is part of the required training for all animal research subject users. The Animal Care and Use policy can be found at the following web site: http://www.utoledo.edu/policies/academic/research/pdfs/3364_70_10.pdf.

**Biosafety and radiation safety**

The Institutional Biosafety Committee (IBC) reviews all proposed research involving recombinant DNA, biohazardous materials, and select agents and toxins conducted under the auspices of the University, in accordance with federal regulations and guidance.10

The University Department of Safety and Health conducts initial Biosafety Level 1 and 2 training for laboratory personnel in a classroom setting. Personnel are required to attend annual refresher courses that are conducted online. Additional training is provided for personnel and investigators interested in working in the Biosafety Level 3 laboratory facility. Following the 2006 merger, significant efforts were made to upgrade the radiation safety program, including centralizing supervision under one radiation safety officer and one radiation safety committee,
hiring new staff, and improving oversight, training and record-keeping. The University-wide radiation safety program is now in full compliance.

The University’s Broad Scope license issued by the Ohio Department of Health/Bureau of Radiation Protection puts the responsibility for administration of the Radiation Safety Program on the UT Radiation Safety Committee. Labs are routinely audited for compliance in the proper use of radioactive materials. Any infractions noted during an audit are recorded and sent to the principal investigator (PI) for corrective action. The lab is then re-audited, usually within 30 days, to confirm corrective actions. Depending on the severity of the infraction the PI’s certificate of use for radioactive materials may be suspended. Training by the Radiation Safety Office and the principal investigator is required for all persons handling radioactive materials, and update training is required annually. Prior to the 2006 merger, the University radiation safety program had been criticized by the Ohio Department of Health. Following the 2006 merger, significant efforts were made to upgrade the radiation safety program, including centralizing supervision under one radiation safety officer and one radiation safety committee, hiring new staff, and improving oversight, training and record-keeping. The Universitywide radiation safety program is now in full compliance.

- Use of biohazardous materials, recombinant DNA and select agents and toxin research: [http://www.utoledo.edu/policies/academic/research/pdfs/3364_70_06.pdf](http://www.utoledo.edu/policies/academic/research/pdfs/3364_70_06.pdf).

Radiation Safety Manual:

**Laboratory safety and health**

The Department of Safety and Health is actively involved in insuring the safety of faculty, staff and students in the laboratory environment. The department administers training in, and oversight of, federal state and local health and safety regulations. Most training on lab safety is driven by the Occupational Safety and Health Administration lab standard (PERPP in Ohio) and Environmental Protection Agency hazardous and infectious waste regulations. Annual training is required for all lab faculty, staff and students. The Department of Safety and Health trains more than 14,000 persons yearly in person or online. In spring 2011, UT had nearly 550 labs on campus. The department inspects all labs on a routine basis and all clinical areas twice yearly.

The Medical University of Ohio functioned in a relatively intense regulatory environment. Following the 2006 merger, a comprehensive risk assessment was conducted of safety and health programs on the Main and Health Science campuses, which resulted in various programmatic changes. Subsequent efforts have strive to attain and maintain complete compliance University-wide with all applicable environmental health and safety laws at the federal, state and local levels. New programs initiated post-merger include Biosafety level 2 lab inspections, laser laboratory inspections, biosafety training, laboratory safety training, laser safety training, fleet safety training, fire safety training and fire drills for residence halls, emergency preparedness drills, and tornado safety waiting areas (Main Campus); and hazardous waste training and nanotechnology training (both campuses).
**Cadaveric tissue research**

Cadaveric tissue may be derived from an embalmed or an unembalmed body donor and is defined as any body, body part, organ, tissue, or prosthetic surgical device or implant that is part of the body at the time of death. The use of cadaveric tissue does not fall under the oversight of the IRB (which has oversight of research involving living individuals). Nevertheless, it was acknowledged about four years ago that oversight of the use of cadavers and cadaveric tissue was needed. Accordingly, a policy for research using cadaveric tissue was put in place ([http://www.utoledo.edu/policies/academic/research/pdfs/3364_70_08.pdf](http://www.utoledo.edu/policies/academic/research/pdfs/3364_70_08.pdf)), and the University Cadaveric Research Committee was established. The policy provides standards and procedures for all research activities that utilize cadaveric tissue. This policy is designed to insure that cadaveric specimens are treated and maintained in a professional and respectful manner. All research experiments or education training programs that utilize cadaveric tissue must receive prior approval by the Cadaveric Research Committee.

**V. Summary**

The University takes seriously its responsibility for teaching about and monitoring the responsible acquisition, discovery, and application of knowledge to faculty, students, and staff, as evidenced by policies, administrative oversight, education, and appropriate intervention with those who violate academic integrity and research policies.

As a result of the merger, the harmonization of policies between the former institutions has strengthened the research integrity education and compliance programs on all campuses. Future directions include the development of an internally-developed training program for responsible conduct of research to replace or supplement the CITI training program that is currently being used.

Recommendations as a result of this self-study include assuring that regulatory units and committees have support commensurate with the increased responsibilities that will come with the expected increase research activity at the University as described in Directions 2011. Not only will this provide the necessary oversight, but it will also encourage the proliferation of research by an increased turn-around time for approvals.

In addition, the University should ascertain that faculty members and teaching assistants are receiving adequate training and support with regard to preventing and identifying student academic dishonesty.

**Conclusion for Criterion Four**

The University promotes a life of learning for its faculty, administration, staff, and students by fostering and supporting inquiry, creativity, practice, and social responsibility consistent with its mission to improve the human condition.

The actions of the board, administrators, students, faculty and staff show a strong commitment, in policy and in practice, to fostering the life of learning. This is reflected in the research and creative work of our faculty, staff, and students, and the methods in which learners are guided to develop core knowledge and skills, including those which will help them succeed in a diverse and global environment that is ever-more dependent on technology.
A key component of the life of learning is an understanding of the social responsibility that accompanies the acquisition, discovery, and use of knowledge; the University provides both educational opportunities and oversight in this area.

The recent reorganization of the University has sparked a great deal of discussion about the possibilities of new schools, centers, and institutes that break disciplinary boundaries and could well serve to deepen and broaden both new and existing research and creative activity and provide richer learning experiences for students at all levels of education.

**Endnotes**

1 Infrastructure for creativity activity (p 9)
2 OQCL Project statistics, March 28, 2011(p. 18)
3 List of campus speakers (p.20)
4 Using our expertise to improve the University (p. 20)
5 Beginning the Academic Experience 9 (p. 25)
6 Licensure examinations pass rates from 2005-2010 (p.43)
7 Graduate placemem rates (p.43)
8 Examples of academic dishonesty (p.45)
8 Self-assessment of animal research program
9 Citi training topics
10 Animal research (p.50)
11. Institutional Biosafety Committee (p. 50)