PROGRAM REVIEW COMMITTEE REPORT
DEPARTMENT OF COMPUTER SCIENCE

REVIEW PROCESS

The Department of Computer Science prepared a self-study following program review guidelines. A two-person external review team visited the campus, reviewed the self-study documents, interviewed unit personnel, university administrators, undergraduate and graduate students, and submitted an external review report. The Program Review Committee (PRC) read the self-study and the external review report, and the PRC liaison for the Computer Science review discussed the Department with the Chair and faculty. The PRC discussed the program review materials with the Dean of the College of Arts and Sciences. This document reflects the PRC’s findings and recommendations.

SUMMARY OF THE SELF-STUDY

Introduction

The Department views its primary role as that of delivering a high quality computer science education. In 1990 the program won the Ohio Board of Regents Program Excellence Award. Since that time, the Department has focused on maintaining program excellence while facing demands of a technologically heavy discipline coupled with increased student enrollment and unfilled faculty lines.

The graduate program faces challenges of student enrollment because advanced work is not necessary to secure an excellent job. Those students who do consider pursuing graduate work at BG may become discouraged, the self-study reports, due to lower than average stipends as compared to the other Ohio schools.

Mission and History

The mission of the Department is stated in the self-study and on the Department’s web site as follows:

“We are a department of computer science within the College of Arts and Sciences. We offer degree programs at both the Bachelor and Master’s levels.

Our department strives to:
* provide a current, comprehensive and client-centered environment for the teaching and learning of computer science and related professional values
* prepare students for professional careers or advanced studies in computer science
* have a positive effect upon students, the university, the community and the computer science profession
* promote the discovery, dissemination and application of knowledge involving computing
* foster personal and professional growth for all students, faculty and staff”

Vision

In significant ways, economic, social, and technological changes influence educational demands and processes. Our department mission reflects these changes through ongoing adaptation. We believe the following focus of mission reflects evolving educational conditions and needs.

<table>
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<th>Mission</th>
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<tr>
<td>Provide a current, comprehensive and client-centered environment for</td>
<td>Exploring innovative approaches to enhance learning and to expand</td>
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<td>the teaching and learning of computer science and related professional</td>
<td>learning opportunities through the integration of technology</td>
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<td>Prepare students for professional careers or advanced studies in</td>
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<td>computer science.</td>
<td>pedagogy to the rapidly changing demands of the computing profession.</td>
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<td>Have a positive effect upon students, the university, the community</td>
<td>Providing leadership within the university and the community on</td>
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<td>and the computer science profession.</td>
<td>integration of information technology and services into educational and</td>
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<td>Promote the discovery, dissemination and application of knowledge</td>
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<td>involving computing.</td>
<td>in selected areas of computing research and scholarship;</td>
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<td>Recognizing the underlying scholarship and creativity associated with</td>
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<td>curriculum and pedagogy development.</td>
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<td>Foster personal and professional growth for all students, faculty and</td>
<td>Expanding co-op opportunities for our students and exploring additional</td>
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<td>workloads, assessing performance, and providing appropriate professional</td>
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<td>development opportunities and support for faculty and staff members to</td>
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Brief Recent History

Since 1994-95 significant curricular changes were made to conform to guidelines of the professional societies and another major curriculum recommendation was released in August 2001 which will necessitate another major reorganization of the undergraduate curriculum. Since 1994-95, the Department has lost several faculty and most of the searches to refill the lines have been unsuccessful.

Program Identification

The Department offers Bachelor of Arts, Bachelor of Science, and Master of Science degrees that reflect a strong liberal arts base. At the undergraduate level, a Business Systems Specialization is offered for those students interested in business. A specialization in Geographic Information Systems is jointly offered with the Department of Geography. Specializations in Operations Research, Parallel and Distributed Computing, and Software Engineering are offered at the graduate level.

Description of Faculty Resources

Over the past six to seven years the Department has experienced a loss of several faculty. Although a successful faculty search occurred in 1997, that individual left after two years. The Department has made energetic efforts to recruit new faculty to fill the open positions but have not been successful. The self-study indicates that this is due to the imbalance in the job market and a national decline in the production of doctorates in computer science. Departmental salaries are low compared to national averages and this reduces the ability to retain faculty. Retirements of the four most senior faculty in the Department are possible over the next three years.

Each tenured/tenure-track faculty member teaches five sections during an academic year. New faculty teach four sections during their first year of employment. All faculty carry academic advising loads and all tenured faculty supervise graduate students in their required graduate degree project. Faculty also carry service assignments. The faculty are able to choose either a traditional academic role with an emphasis on research or a service-oriented role with an emphasis on service-oriented activities.

Description of Graduate Assistant Resources

The Department assigns graduate teaching assistants to help faculty with instructional related activities. The Department also provides computer science graduate students for assistantships in other departments. During 2000 and 2001 graduate assistantships offered by other departments were 15 and 19 respectively.

Description of Staff Resources

Currently the Department has three support staff plus the chair. Additionally, a Systems Administrator maintains the Department’s computing infrastructure. In the past,
a research associate supported faculty research by writing programs and designing experiments. This has been unavailable since the individual left this position in 1997.

Majors

The Department has seen a gradual increase in the number of undergraduate computer science majors over the past seven years. During the fall in 1994 there were 265 undergraduate students in comparison to 380 students enrolled during fall 2000. The self-study indicates that this is due to successful recruitment and retention efforts and a continuing strong job market. The graduate program experienced a decline in student enrollment during that same time, with 59 students enrolled in Fall 1994 as compared to 32 students enrolled in fall 2000. The Department indicates, in a letter of response to the external report, that the current graduate student enrollment has increased to 47 students and that applications are higher this year than in the past years.

Recruitment and Retention Efforts

The Department participates in Preview Days and President’s Day. The Department participates with the Admissions Office in the Host-A-Scholar Day. The Department actively recruits underrepresented populations into the discipline by sending faculty to female-only high schools and producing a brochure and web site on “Women in Computing.” The Department has also worked with the Black Data Professional Association to attract people of color into the profession.

The Department also focuses on retention activities. Faculty dedicate six hours of office hours each week to assist students with class projects. A faculty member is assigned as an advisor to each student and stays with that student throughout the duration of the program. A meeting is held each fall for freshman computer science majors; graduate assistants are assigned in the two major computing labs to assist students with projects.

Graduate student recruiting is accomplished through holding a fall Friday workshop to promote the exchange of curricular ideas and research. Department sponsored colloquia are held at neighboring institutions. Promising undergraduate students are given advice that enables them to complete a bachelor’s and a master’s degree in five to five-and-a-half years. Representatives are sent to traditionally black colleges to recruit graduate students.

Instructional Service

Computer-related skills are important in other disciplines. Currently, 32 BGSU degree programs require one or more computer science courses. Two service courses are also taught at the graduate level.
Facilities and Equipment

The Department invests in facilities that are necessary to support advanced instruction and research. The Department uses its operating budget to maintain a diverse network of UNIX, Macintosh, and Windows desktop machines and servers. The Department operates two web servers used for instruction and research. The Department maintains its own mail server and has its own Internet subdomain. The Department has invested in its own equipment to provide faculty the flexibility needed to utilize and experiment with “leading-edge” software. Additionally, the Department relies on facilities provided through the university’s Instructional Media unit and through Information Technology Services. Many of the computer science courses make use of the Department’s specialized labs and servers.

Information Resources and Services

Library support services are important to the academic degree programs in the Department. The BGSU libraries make electronic journals and databases accessible through the OhioLink service. The Frank C. Ogg Science and Health Library provides access to over 60 journals in the technical area of computer science. Based on acquisitions in the collection 1996-2001, there are 2200 books and the circulation rate is reported to be well above average.

Financial Resources

In the early 1990’s, the Department was successful in acquiring additional state funds from Program Excellence and Academic Challenge Awards. These funds were used to supplement the operating budget for faculty travel related to research and professional development and to purchase hardware for the Department’s intranet, research facilities and graduate student offices as well as necessary software. The Department anticipates expenditures by saving funds. During 1994-1999 the Department was able to pay back loans it had taken to buy computers. Subsequent to the payback of loans, funds are now available for other purposes.

Faculty Quality and Productivity

The faculty evaluation document provides recognition for many of the expectations placed on the faculty. Faculty development receives recognition because retraining is critical in the rapidly changing field of computer science. Teaching performance receives a primary emphasis. During 2000-01 academic year, 72% of students in CS classes rated the faculty as “superior” or “above average” using the standard evaluation instrument. As a masters-level department with relatively high teaching and service expectations, the self-study finds that “the research/scholarship output of the department is reasonable.” The self-study states that a “better job” of grant writing needs to be accomplished.
Student Attributes

The computer science undergraduate program attracts good students, with average high school GPA’s ranging from 3.11 – 3.18 and ACT scores ranging from 23.62 – 24.19 for the 1994-2000 time period.

The Quality of the Curriculum, Instruction, and Support Services

The Department reviews the quality of the curriculum, instruction, and support services. The Department uses a standard teaching evaluation instrument in all sections of classes. A written summary is prepared for each course taught by each faculty and becomes part of the faculty member’s personnel record. Employers of students in co-op assignments have an opportunity to rate the students. A summary of the results provided in Appendix D provides consistently positive comments. An alumni survey is also distributed. The program had utilized suggestions to implement changes.

General Education

As a mathematical science, computer science is not represented in the general education core. Many programs and majors require either CS 100 Computer Basics or CS 101 Introduction to Programming of their students. Computer science courses are required or recommended by approximately 32 other degree programs at the University.

Major

The Department is frequently engaged in curriculum revisions and the Department is now preparing to make further major changes to the undergraduate curriculum in response to the 2001 curriculum recommendation.

Minor

There is a computer science minor but few students choose that option.

MS program

The MS program allows the student to gain additional expertise. A few formal specializations have been offered over the years but few students select them. The specialization in Operations Research is jointly offered with the Department of Applied Statistics and Operations and Research (ASOR). Currently the two departments are discussing moving this specialization out of CS and into ASOR.

Universities are having trouble attracting computer sciences graduate students due to the very strong market for undergraduate CS majors. The problem is compounded for the Department due to stipends that are below peer groups.
Quality of Graduate Student Body and the Learning Experience

Over the 1994-2000 time period, the average undergraduate GPA was 3.18-3.51, the average GRE verbal was 443-473 and the average GRE Math was 652-708. The number of graduate students declined from 58 in 1994 to 32 in 2000. Despite the decline in enrolment, the Department has not lowered its admission standards.

Assessment of Learning Outcomes

Graduates of the computer science program should be able to:

1. Work effectively as a member of a software development team, which means being able to
   a. Employ effective teamwork and interpersonal communication skills;
   b. Analyze a software development problem and design a software solution;
   c. Implement a software design specification in an appropriate programming language development environment;
   d. Incorporate appropriate user interface design principles into software design specifications;
   e. Design and apply relevant software testing procedures to evaluate the design specification compliance;
   f. Document the source code to facilitate software maintenance activities;
   g. Develop high quality user-level documentation for software.

2. Independently acquire new computing related skills (e.g. new computing environment, new programming language).

3. Communicate technical design and implementation concepts to computing professionals as well as to noncomputing personnel, both orally and in writing.

4. Evaluate hardware and software in the context of integrating computing into an environment or defining a computing solution to a particular problem or situation.

5. Conduct themselves in an ethical and professional manner.

A variety of assessment methods are utilized. For example, the Department utilized a mid-course assessment to allow for immediate changes in response to student feedback. The CS faculty also made several changes as a result of student assessment during 2000-2001. For example, review sheets were utilized prior to exams in most lower-level classes; more hands-on-work was added to several CS 100 sections; classes using PowerPoint presentations made the presentation files available to students; and several classes made handouts and other courses available on the web.
Quality and Focus of the Service Component of the Unit

Nearly all major decisions are made by consensus within the Department. A number of committees and positions are defined, as listed on pp 20 – 21 of the self-study. Faculty spend significant time in their service at the department, college, university, and professional society levels. The inability to fill faculty lines in recent years has added to the service load of the existing faculty.

Instructional Demand

There is a strong interest in nearly all computer science courses at all levels. There is a significant demand for all of the courses; a waitlist policy guarantees majors primary access.

Employment Demand

The self-study states that computer-related occupations are currently the fastest growing in the U.S. economy. There is a shortage in computing professionals and companies are aggressive in hiring students. Computer science graduates (undergraduate and graduate) have no problem finding employment.

Centrality to the University Mission

The Department contributes to being a premier learning community through its timely curriculum and quality of instruction. All students engage in active learning and the Department provides an educational environment that develops a culturally literate students.

Comparative Advantage/Uniqueness

The Department has established an exchange program for computer science majors with Fachhochschule Salzburg in Austria.

Areas of Duplication with other Programs Offered at BGSU

There is overlap in about two-thirds of the material taught in CS 100 and MIS 200. The self-study states that both courses are probably needed because the target audiences are different.

Financial Considerations

Professional development is a very high priority for the Department. A significant portion of the budget supports retraining and skill development for faculty. State-of-the-art hardware and software configurations to support instructional and research efforts are a Department need. Currently the Department spends $20,000 for hardware and software during a year.
The most significant resource problem facing the Department is the difficulty in hiring new faculty. The Department anticipates its first retirements of full-time faculty in the near future. This complicates the faculty resource picture more. Secretaries have taken on increased responsibilities to accommodate the reduced faculty numbers and increased number of students. A Systems Administrator supports a wide variety of hardware and software. The self-study states that the compensation for this person is not adequate.

The Department needs space for graduate student offices. The self-study states a need for a new hands-on-instructional lab to support the computer science courses. The desktop equipment for the faculty needs to be replaced every three to four years because it is imperative that faculty are able to run contemporary software packages. In many instances, ITS has asked CS to begin paying the annual license fee for software that is needed for various classes. This is a problem because there is no longer a central software fund that departments can apply to. The self-study states that library support for CS is more than adequate.

Unit Planning

The Department has articulated five goals with accompanying strategies and time lines for each academic year from 2002-03 to 2006-07. A discussion about each goal is also included in the planning section of the self-study.


The last major curricular change was 1994-95. The Department will be phasing in new curricular changes over the next few years to be responsive to curriculum recommendations proposed by the professional organization.

2) Goal: Review and revise the graduate curriculum.

There has not been a systematic review of the graduate curriculum in seven years. The Department will now engage in a self-study that includes review of the three graduate level specializations to evaluate possible needs for change. The Department will also revisit the requirement of a non-thesis project to re-examine its role and discuss alternatives.

3) Goal: Increase the number of graduate students to fifty, giving priority to recruiting Ohio residents, women, and minorities.

Over the next seven years the Department will work with the Graduate College to increase the number of teaching assistants as well as the amount of the stipend. The program will also implement a 4+1 program to recruit more Bowling Green State
University undergraduates. The Department will also continue its contacts with strategic programs for recruitment purposes.

4) Goal: Return to a staff of 12 Ph.D. faculty (13 if enrollment continues to grow) and retain these faculty.

The Department has identified strategies that will continue to focus on the recruitment of women and minorities. They will also utilize several new recruitment initiatives, including: help with spousal or significant other questions, invitation of the candidate and guest of his/her choice, and shifting to a continuous recruiting pattern instead of a seasonal pattern. Individualized, competitive packages will be offered to new faculty. Discussion of faculty retention activities includes strategies for new as well as mid-career and senior faculty.

5) Goal: Maintain (and ideally improve) departmental research activity, productivity, and professional development.

The Department recognizes that success in this area will depend, in part, on the ability to recruit new faculty. A Departmental colloquium will be reinstated. The Department indicates a desire to work with the library to increase access to electronic publications. Research groups will be reinvigorated. Attempts will be made to schedule blocks of research time for faculty.

RESULTS OF PREVIOUS REVIEWS

This is the first cycle of academic program review for the Department of Computer Science.

SUMMARY OF THE EXTERNAL REPORT

Strengths

The external review team noted a number of strengths, including:

1. “The undergraduate program is the strongest aspect of the department.”
2. The program is well designed and the undergraduate instruction is outstanding.
3. The faculty strive to ensure that the undergraduate experience is rigorous.
4. “The dedication, care, and commitment of the faculty is remarkable.”
5. The Department has been successful in establishing gender diversity in its staff.
6. The faculty is comprised of a reasonable mix of teaching and research faculty.
7. The Department has a long history of positive leadership and a deep sense of collegiality.

**Concerns**

The external review team noted a number of concerns and challenges facing the Department. According to the reviewers the concerns include:

1. The graduate program has seen a decrease in enrollment and relies too much on international students.

2. The graduate curriculum appears general and unstructured.

3. There is insufficient space for graduate students.

4. Graduate student stipends are not competitive.

5. There is no electronic access to the publications of the IEEE Computer Society.

6. There are not enough faculty to support: the large undergraduate program (400 students), the graduate program (30-35 students), and service course enrollments (over 600 students per year).

7. There has been a lack of success in recruiting faculty.

8. Faculty workloads are heavy.

9. ‘From a national perspective, faculty salaries appear to be low.”

10. ‘There may be a disconnect in communications between the Department and upper administration that should be investigated and corrected.”

11. The external reviewers judged that planning was a significant weakness in the Department.

12. “The fundamental question is the viability of the graduate program given loss of enrollment and somewhat marginal level of support.”

13. The Department is well administered but there is some question as to the efficiency of its procedures.

**Recommendations of the External Team**

Recommendations from the external review team were embedded throughout their report and are as follows:
1. Obtain curricular input for the planned revisions from a “Computer Science Advisory Committee” that could include regional employers and alumni.

2. Increase space available for graduate students

3. Increase graduate student stipends to be competitive at the regional and national level.

4. The Director of Graduate Studies should initiate major recruiting efforts at the undergraduate institutions in Ohio. Appropriate release time should be provided for this recruiting effort.

5. Plan for long-term needs for equipment acquisition, maintenance, and on-going support.

6. Obtain “real life” software, such as CASE tools, to support advanced courses in software engineering.

7. Make plans to secure access the digital library of the IEEE Computer Society as soon as possible.

8. Start the recruiting process much earlier in the academic year for faculty searchers.

9. There are a number of ways that heavy faculty loads could be addressed: a) provide course credit for supervising graduate student projects, b) provide release time for significant service activities such as the Directors of Graduate and Undergraduate Programs, and c) thoroughly review committee assignments, advising loads, class size limits, and service course loads.

10. Carefully review all Departmental committee assignments to see if they can be 1) eliminated, 2) done individually by the Chair rather than a large group of faculty, or 3) reassigned to a staff person such as the System Administrator or the Departmental Coordinator.

11. Review the planning process in all activities of the Department. The most important areas are faculty growth, research productivity, and curriculum. A plan should be developed that addresses where the faculty need to be over the next five to seven years. This plan should address proper size of the Department, projected enrollments, plan for upcoming retirements, recruitment at the senior level, need for supplementary salary or start-up funds to attract good faculty, and hiring within a certain area to create a critical mass of researchers in a specific discipline. Also, the planning should look at how best to utilize existing faculty.

12. Develop a plan for research that incorporates reasonable and specific timelines and metrics. Capitalize on the diversity in the program by looking at funding for women and minorities. Program opportunities for predominately undergraduate institutions should be explored.
13. Host a workshop on proposal writing; engage an NSF program director in this effort.

14. Factor graduate student advising in the workload, in recognition of the importance of this type of scholarly activity.

15. Incorporate a feedback loop and an advisory committee in the plan for undergraduate and graduate curriculum development. Review the curriculum and place an emphasis on depth and specialization, which will help clearly differentiate the goals of the undergraduate and graduate programs.

**PROGRAM REVIEW COMMITTEE FINDINGS**

The self-study is a well-written, clearly presented document that provides a critical review of the Department. The tables, figures, and appendices appear to be carefully selected to appropriately inform the reader. The PRC appreciates that the Department has undertaken the program review process in an earnest fashion.

It is clear that the undergraduate program is a strength of the Department. The PRC commends the faculty for their obvious commitment to quality undergraduate instruction, which is evident in the rigorous curriculum and the amount of time full-time faculty spend in undergraduate instruction, including advising activities. Additionally, past graduates of the program commented that the faculty are helpful, available, and skilled (Self-Study, Appendix G, p.3); the external reviewers commented that the “dedication, care, and commitment of the faculty is remarkable.”

The Department has also made an important and successful commitment to gender diversity in its staff and students. Efforts to attract and retain women are seen in the arrangements to schedule mentoring visits to area companies for women students and though the Departmental web site that provides a “BGSU Women in Computing” (http://www.bgsu.edu/departments/compsci/WIC/index.html) site, which identifies the benefits for women in the discipline. The external reviewers also noted “a level of gender diversity in its staff not often seen.” The self-study (p.27) indicates that the Graduate Committee works with the Graduate College to recruit minority students from all over the world. Computer Science has also sent faculty to strategic universities to recruit minority students for the graduate program. Because of the exceptional marketability of computer science graduates (self-study p. 27), nontraditional students show much interest in the undergraduate and graduate computer science programs.

The PRC commends the Department on its good fiscal planning, strategic planning, and sound management. The Department anticipates expenditures and saves available funds. The Department has been able to support faculty research, development, and travel and has made necessary hardware and software purchases. All loans have been paid back, which now frees up funds for other purposes.
Professional development is a high Departmental priority. Because the Department expects that faculty will continually retrain to increase knowledge about new technology, a significant portion of the operating budget (approximately 20% as seen on Table 13, p.60 in the self-study) is dedicated to support attendance at conferences and workshops.

Heavy workloads exist due to a combination of factors, including Department governance structure, insufficient faculty, and large enrollments. At the time of meeting with the PRC liaison, it was reported that the Department successfully negotiated course release time for the graduate coordinator and the undergraduate coordinator effective fall semester 2002.

Findings Requiring Action

1. Department Planning. The external review states that, “planning represents a significant weakness in the department.” The PRC disagrees. It is obvious that the Department engages in self-evaluation and thorough planning. Unit planning produced five goals, along with strategies for accomplishment and estimated timelines (self-study, pp. 34 – 43). Departmental planning was also verified and evident during the meeting between the Department faculty and the PRC liaison. Nevertheless, it would be prudent for the Department to review the comments of the external reviewers regarding planning and determine what can be learned from their perceptions. For instance, comments about establishing priorities and defining Department focus could contribute to the Department’s future planning efforts.

2. Administrative Use of Faculty Time. The PRC finds that the Department’s committee structure has costs as well as benefits. The PRC recognizes that the Department faculty are proud of their longstanding shared governance system and collegial atmosphere. The PRC also recognizes that the Department is in the best position to establish how it functions most effectively. However, the PRC believes that careful attention should be given to efficiency, making sure that the system works with the least amount of drain on faculty time. The PRC also agrees with the external reviewers that the Department needs to be clear about its prioritization of faculty assignments. As indicated in the external report, “while all the current programs are valuable, there should be recognition that it is not possible to do everything….”

3. Distinctiveness of the Graduate Program. Although the Department has struggled with decreasing enrollment of graduate students, the Department has not lowered its standards for graduate admissions. The students who are offered admission and enroll have very good undergraduate GPA’s and GRE scores. Most recently, it appears that the graduate enrollment has increased: 47 students are enrolled for admission.

The PRC liaison discussed the graduate curriculum with the Department faculty. It became clear that although the graduate curriculum is somewhat general, it is not without focus. The graduate curriculum’s flexibility has been effective in that it allows
for the insertion of timely topical courses. For example, the Department was the first in Ohio to be able to offer a course on interaction between humans and computers, reported by faculty to be one of the fastest growing areas in computer science. The graduate curriculum does reflect a focus as an “applied” curriculum with much “hands-on” experience, and in this regard contrasts to more theoretically based programs. The PRC finds that the graduate program is not identified in a way that makes its distinctiveness evident.

4. Assessment. The Department has a well-developed assessment plan for the undergraduate programs. The PRC recognizes that the Department has developed undergraduate learning outcomes and a systematic, comprehensive assessment plan that focuses on results and analysis of the results. The PRC finds that the Department’s assessment practices at the undergraduate level stand as a model for other units at the University. Assessment activities are less well developed at the graduate level.

5. Research and grant productivity. The PRC agrees with the self-study’s assessment that the research/scholarly productivity of the Department is “reasonable,” but that they could improve in the area of grant proposal submissions.

6. Resources. There are a variety of resource issues that merit action.

   Faculty Recruitment and Retention. The self-study as well as the external reviewers indicate that there are not enough faculty to meet the instructional, research, advising, and service obligations without very heavy workloads. It was reported to the PRC liaison, during the meeting with the Departmental faculty, that the Department had very recent successes in hiring two graduate faculty members. The PRC applauds this success. The Department will face added challenge with the impending retirement of the four most senior faculty over the next three years. The need for very specific faculty recruitment and retention strategies is evident in the face of the impending retirements.

   Technological Support. Concerns were expressed by the faculty during the meeting with the PRC liaison about the lack of understanding of how ITS works to meet the needs of departments. It appears that the Department, by virtue of its mission on the campus, is among those units most heavily impacted by decisions to change university-supported software and platforms. Changes in software require that the Department update its curriculum. The Department reports, for instance, that the Chair was not consulted or engaged in the decision to move to Windows XP and to OS 10, a change of considerable consequence to the Department. Because of the nature of the discipline, the Department is reliant on funding for new software and hardware. The PRC is concerned that the Department feels it has gone from one of ITS’s main customers a few years ago to becoming somewhat lost in the system of priorities.

   Space. The PRC finds that space for graduate students is inadequate. There are also space concerns surrounding new faculty hires and closed
laboratory activities with students. The PRC notes the faculty’s complaint that it is frequently impossible to find space with 25-30 computers available to hold lab classes and there is no space on campus available to be reserved.

Graduate Student Stipends. Graduate student stipends are not competitive with those of the other Ohio universities, making it difficult to recruit top students. This situation is by no means unique to this department. The Department Chair and/or Graduate Coordinator should work with the Graduate Dean to supplement graduate student stipends. Discussions should include creative ways that graduate awards can be bundled with summer stipends or that other attractive incentives can be added.

Library Holdings. The PRC agrees with the self-study, the external reviewers, and faculty that it is critical that they obtain at least certain subsets of the IEEE Computer Society holdings. However, the Department faculty indicated that the IEEE does not negotiate reasonable rates nor are they willing to unbundle holdings so that only needed subsets can be obtained.

Faculty salaries. Faculty salaries appear low relative to other Ohio institutions and the national average for faculty in computer science departments, and this may have added to difficulty in recruiting faculty. The University-wide Compensation Plan still remains the President’s priority and is the Department’s best recourse to argue for increased salaries on a case-by case basis. Close communication with the dean is essential to move salaries to levels that are competitive with comparable institutions.

PROGRAM REVIEW COMMITTEE RECOMMENDATIONS

Based on reviews of the self-study and external review documents, and consistent with the major findings that resulted from these reviews, the PRC makes the following recommendations. For detail about the rationalization of each recommendation, see the finding with the corresponding number, just above.

1) Department Planning. The PRC recommends that the Department develop a strategic plan with very targeted priorities and established timelines. The strategic plan should be developed by April 2003, and consider, at a minimum the following:
   a) target size of the Department based on faculty size, student enrollment, and curricular offerings;
   b) management of workloads;
   c) plans for external funding, which might include exploration of NSF opportunities for undergraduate program/student involvement;
   d) faculty scholarship;
   e) curricular revisions including identification of program distinctiveness; and
   f) carefully calculated plan for faculty recruitment needed for pending retirements, which might include permission to hire faculty in lines in anticipation of effective retirements.
2) *Administrative Use of Faculty Time.* The PRC recommends that the Department revisit its committee structure to make sure that it still serves the needs of the Department and the individual faculty. A review of committee responsibilities should be completed by December 2002, and action taken if appropriate.

3) *Distinctiveness of the Graduate Program.* The PRC recommends that the Department consider how to articulate its focus and distinctiveness. This should be a part of the graduate program review, as indicated on page 36 of the self-study, and finalized during the 2004-2005 academic year.

4) *Assessment.* The PRC recommends that the review of the graduate curriculum be preceded by the development of a student-outcomes-assessment plan. Assessment information should be utilized as a source of information to guide the revision of the graduate curriculum as proposed on page 36 of the self-study. The assessment plan should be ready for implementation by December 2002.

5) *Research and grant productivity.* The PRC recommends that the Department set goals for increases in submission of grant proposals, and that it support such efforts in its faculty development plans.

6) *Resources.* The PRC recommends that the Department develop a comprehensive plan for resources needed. The comprehensive plan should include many of the items identified below. The PRC realizes that the financial picture in the state makes this a poor time to request increases in funding. However, the situation also is one in which a well-conceived plan is more necessary than ever. It might also identify opportunities for Development. The plan should also address the Department’s strategies for increased external funding and overall research programming and activities. The plan should be finalized by December 2002.
   a) *Faculty Recruitment and Retention.* The Department should develop a very specific faculty recruitment and retention plan to prepare for the pending retirements. Strategies might include: negotiating with the Dean to start faculty recruitment before the retirement position is actually open; searching for more than one position in a given year to add flexibility to how offers can be made; searching for a senior level faculty member; and position descriptions that lend itself to the broadest pool of applicants. This should be finalized by January 2003 and approved by the Dean.
   b) *Technological Support.* The Department Chair must work to make sure communications within the Department are coordinated with ITS. Additionally, the Vice Provost for Academic Programs should facilitate an initial conversation between the Department Chair and the Chief Information Officer to insure that appropriate communication channels with ITS are open.
   c) *Space.* The Department should work on a strategy with the Dean so that the Dean is prepared to work with Capital Planning on a plan to devote acceptable space for faculty, graduate students, and instruction in computer laboratories. The plan
should also include the allocation of appropriate hard funding for the dedicated computer science laboratory.

d) **Graduate Student Stipends.** The PRC recommends that the Department Chair and/or Graduate Coordinator should work with the Graduate Dean to identify ways that graduate student stipends can be offered to be more attractive. Discussions should include creative ways that graduate awards can be bundled with summer stipends or that other attractive incentives can be added. Discussions and plans should be finalized by December 2002.

e) **Library Holdings.** The PRC recommends that the Department work with their library representative as well as with the appropriate people at the state level to make this a state effort. These efforts should be ongoing.

f) **Faculty Salaries.** The PRC recommends that the Department work with the Dean to continue to establish salaries that are competitive at least with comparable academic positions. The university community shares concerns about salaries. The University –wide Compensation Plan still remains the President’s priority and as it continues to be implemented, salaries should be improved.

The Department of Computer Sciences should report annually to the Dean of Arts & Sciences, with a copy to the Provost, on the implementation of these recommendations.