Department of Physics

The Florida State University
Tallahassee, Florida 32306

Item #79
Attachment 4
GPC Actions
1/15/79

MEMORANDUM

TO: Graduate Policy Council

FROM: Computing Center - Computer Science Review Committee

DATE: December 18, 1978

Herewith is submitted the report of our committee. We suggest that copies of this report be transmitted to the following:

Dean Robert Johnson
Vice President Lawton
Jesse Poore
Abe Kandel
Computing Center Advisory Committee
Charles MacArthur
Science Area Committee, Arts and Sciences

For the Committee

John David Fox

John David Fox

cc: J. Beard
N. Heerema
J. Gapinski
D. DeTar
S. Hess

Item # 7

FINAL REPORT

COMPUTING CENTER REVIEW COMMITTEE

A. We have a well run Computing Center providing superior computing services to graduate education and research at low cost. These services are used widely and effectively by the faculty and graduate students.

This committee was instituted to provide a means by which problems between the Computing Center and the mathematics department could be mediated. This has largely been accomplished without the imposition of new strictures on either party, and the present cordial state of relations between the Computing Center and Computer Science is primarily due to the efforts of Jesse Poore and Abe Kandel.

The University must give continuing attention and resources to promotion of the Computing Center and the Computer Science program because of their increasingly important roles in the training of students and the cultivation of knowledge. The program in computer sciences must be strengthened to meet the demand for trained computer specialists from a very wide range of disciplines. The committee recommends that Computer Science upgrading become a high level goal for the University.

B. Observations and suggestions on the relationship between Computing Center and Computer Science

1. A carefully gauged special relationship should be cultivated between the Computing Center and the program in Computer Science. Each can help the other more than has been the case in the past. Happily with the employment of a Director of Computer Science this Fall, it appears that fruitful cooperation will materialize.

2. Administrative responsibility for the Computing Center and for the program in Computer Science finally converges at the Academic Vice-President level. This is a considerable distance in the administrative hierarchy and increases the likelihood that the degree of cooperation between the two programs will be determined more by confluence of self-interest than by administrative encouragement. The Computing Center's responsibility to be supportive of graduate instruction in Computer Science must be adequately attended to by the administration.

C. Suggestions to the University Administration

1. The allocation of State funds to academic units for computing services constitutes a real expenditure of University funds. Allocation of computing resources should be based, in part at least, on the previous record of accomplishments in research and instruction on the part of the users of the Computing Center facilities. Documentation such as that in Exhibit B should be kept up to date and consulted by the Computing Center Advisory Committee.

2. The subject of provision of computing services to non-university users was addressed by the committee. The Computing Center has acted in a very imaginative manner with respect to the allocation of computing services to outside users to the benefit of both the University and users within the state and local community.

   The Computing Center management has greatly enhanced the computing capacity of the center through the provision of services to other state agencies. The funds generated through such arrangements have increased the computer capacity at a rate exceeding the demands on the machines. This operating philosophy was approved by the committee and should be encouraged so long as the mission of the University to graduate education and research is kept in the forefront, and the relationship with the outside user agencies of the state operate to the advantage of the University.

3. The use of the instruction and research Computing Center by administrative units needs to be reviewed. Present policy appears to place little or no restraint on the use of the Computing Center by Academic Research and Planning. (See Exhibit C.)

4. The Computing Center has received approval and funds to enlarge the machine room of the Computing Center. This expansion is a temporary solution to their space problems. Recognizing the difficulties in relocating such computing machinery, we recommend that the University coordinate the construction of a building for the Computing Center and the acquisition of the Computing Center's next primary large scale computer to minimize machinery relocation problems.

D. This section concerns future (and present) computing needs of the University community. The committee has been informed of the development plans of the Computing Center. These plans are already under the supervision of university committees. Computer capabilities and pricing are still undergoing dramatic changes towards more useful and more powerful capabilities at lower unit costs, and the Director of the Computing Center and the responsible committees are adapting the intermediate and long range plans to take maximum advantage of these changes.

Perhaps the major change in the past few years has been the development of computer networks. At F.S.U. this means that individual departments or research groups are being encouraged to acquire small to medium sized computers or processors designed for the task in hand. The role of the Computing Center is to provide four main resources: (1) extensive data storage, (2) fast mathematical computation, (3) network communications so as to make maximum computational facilities available to faculty and students, and (4) expert consultative support of both hardware and software activities on campus. The Computing Center is also engaged in extensive support of computational research among state agencies as mentioned in Section C.

In comparison with other universities the F.S.U. Computing Center rates very high. One committee member (DeTar) has had considerable experience with the Computing Center at ETH, Zürich (Federal Polytechnic University), and with the Lawrence Berkeley Laboratory Computing Center. In many respects the F.S.U. operation is far superior, and on any performance to cost comparison F.S.U. appears to rank nearly at the top of the computing centers worldwide. However, from the standpoint of convenience for student and faculty users of the Computing Center, F.S.U. must rank near the bottom among computing centers, a situation that reflects the relatively low priority assigned to computing at F.S.U. In a survey conducted by the committee and reviewed in the Appendix of this report, users by a sizable majority indicated that work space was unsatisfactory to meet their computing needs. What is greatly needed is an area where users can work on development and use of programs. This means work space, some lockers for temporary storage of work material, convenient access to consultants, access to documentation of systems programs, a variety of terminals suitable for the tasks, and convenient treatment of other aspects of input and output (I/O). This means reliable treatment of cards, of paper tape, and of other media. (Magnetic tapes are now handled well.) It also means reliable treatment of printed output.

Other computing facilities have a central user area and computer I/O area equivalent in space to one floor of Love. Even though the major I/O load to the computing facilities may lie in individual terminals dispersed over campus and even the state, the need for a central users area will remain a must for serving special needs of the University community.

APPENDIX: Statistical Information and Forms

In an effort to determine user sentiment regarding services provided by the Computing Center, the Committee circulated a questionnaire to all faculty and staff users in the University community. The questionnaire, a copy of which is attached as Exhibit A, addressed five aspects of the Computing Center's operation: seminars and technical assistance, budget allocation practices, input-output operations, facilities, and satisfaction of University needs. Each topic area was further defined by a set of sample questions and was evaluated by means of a rating scale with five options ranging from "very good" to "very poor". Space was provided for free response. Of the 235 questionnaires distributed, 97 were returned in usable form making the response rate 41.3%.

Table 1 presents results of the survey. For all subject areas except facilities, the Computing Center received high marks. For instance, 74.7% of all respondents rated the Center above average regarding seminars and technical assistance while only 4.9% rated it below average. Similar results emerged on the questions of budget allocation, input-output operations, and satisfaction of needs.

The facilities issue evoked a different response pattern. While nearly a majority of the respondents ranked the Center above average, a large proportion -- 31.6% -- rated it below average. This large negative response, more than four times that for any other subject area, prompted additional inquiry using two of the sample questions for the facilities item on the questionnaire; specifically, "Has Plato been a beneficial instruction tool?" and "Does the Computing Center have adequate space to satisfy its responsibilities to users?" Those frequencies appear in Table 2. Two points are

Table 1

RELATIVE FREQUENCIES FOR FIVE SUBJECT AREAS
(Percentages)

Subject Area	Very Good	Good	Average	Poor	Very Poor	Unable to Rate	
Seminars and Assistance	22.3	52.4	10.7	4.9	0.0	9.7	
Budget Allocation	26.0	50.0	12.5	3.1	0.0	8.3	
Input-Output Operations	10.5	48.4	23.2	3.2	1.1	13.7	
Facilities	9.5	30.2	17.2	16.3	9.4	17.2	See Note
Satisfaction of University Needs	14.7	46.3	12.6	6.3	1.1	23.2	

Table 2

RELATIVE FREQUENCIES FOR THE FACILITIES ISSUE
(Percentages)

Question	Yes	No	Don't Use	No Comment/Don't Know
Has Plato been beneficial?	9.3	20.6	8.2	61.9
Is Space adequate?	5.2	32.0	NA	62.9

NA = not applicable

Note: These are corrected percentages made on Jan. 16, 1979 by Dr. Fox.

evident. First, the "nos" outnumber the "yeses". For the Plato question they do so by a factor of two; for the space question, by a factor of six! Second, the majority of respondents did not take sides. This finding is not surprising since the questionnaire did not require respondents to specifically answer the sample questions.

In sum, University users generally appear to applaud the performance of the Computing Center. However, facilities — notably the lack of space — appear to be a source of disenchantment among users.

The Committee, in order to obtain some indication of the extent to which the Computing Center serves as an important resource in meaningful research, circulated a second questionnaire to the University community. This form, attached as Exhibit B, requested information on all papers actually published in 1977 which utilized results from the Center. The returns are available from the Chairman of this Committee.

Exhibit A. Questionnaire

IF YOU OR YOUR STUDENTS HAVE NOT USED THE SERVICES OF THE COMPUTING CENTER SINCE JANUARY 1976, CHECK HERE _____ AND IGNORE THE REST OF THE FORM. IF YOU OR YOUR GRADUATE STUDENTS HAVE USED THE COMPUTING CENTER SINCE JANUARY 1976, PLEASE COMPLETE THE FORM. IN ANY CASE, RETURN THE FORM TO SEYMOUR L. HESS, 401 LOVE.

The committee solicits your appraisal of various features and services of the Computing Center. Five topic areas are listed, and for each several questions are presented to further define the topic. Rating scales and spaces for comments are also provided.

1. Seminars and Assistance.

   * Are instructional sessions on programming language, files, tapes, and other subjects helpful and sufficiently frequent?

   * Are Help Desk hours convenient?

   * Is the Computing Center Staff responsive to your technical inquiries and to those of your students?

Rating:

Very Good	Good	Average	Poor	Very Poor	Unable to rate

Comments:

2. Budget Allocation.

   * Is computing time allocated properly to meet the needs of individual faculty?

   * Have the allocation guidelines hampered your ability to conduct meaningful research and to apply for external grant funding?

   * Do the allocation guidelines strike a correct balance for research, classroom instruction, theses and dissertations?

Rating:

Very Good	Good	Average	Poor	Very Poor	Unable to rate

Comments:

3. Input-Output Operations.

* Is the preventive maintenance schedule convenient for you and your students?
* Are tapes, plots, printed and punched output carefully handled and filed?
* Should computing charges be further increased for busy periods and decreases for slack periods to even out the pattern of usage?

Rating:

Very Good	Good	Average	Poor	Very Poor	Unable to Rate

Comments:

4. Facilities

*Has Plato been a beneficial instruction tool?
* Are tape drives, permanent file storage space, and remote terminals sufficiently plentiful?
* Do the Cyber 73 and 74 meet your computing needs?
* Does the Computing Center have adequate space to satisfy its responsibilities to users?

Rating:

Very Good	Good	Average	Poor	Very Poor	Unable to Rate

Comments:

5. Satisfaction of University Needs.

* Has the Computing Center been responsive to the needs of the university community?
* Do all segments of the university community have sufficient input into the major decisions of the Computing Center?

Rating:

Very Good	Good	Average	Poor	Very Poor	Unable to rate

Comments:

Signature of respondent

Selected Data from the Computing Center, FY 1977

	CASH	STATE ALLOCATION	TOTALS	% of UNIV. TOTALS	% PAID IN CASH
1. University:					
Division I	$142,400	$546,423	688,823	41.92	20.67
Division II	28,266	141,375	169,641	10.32	16.66
Division III	26,881	111,959	138,840	8.45	19.36
Division IV	3,983	14,930	18,913	1.15	21.06
Division V	8,170	132,929	141,099	8.59	5.79
Division VI	16,967	468,959	485,926	29.57	3.49
University totals:	226,667	1,416,575	1,643,242	100.00	13.80
2. Non-university total:	571,114	-0-	571,114	-	100.00
3. Overall totals:	797,781	1,416,575	2,214,356	-	36.04
4. University units whose totals exceeded $40,000:					
Computing Center	-0-	293,332	293,332	17.85	0.00
Meteorology	43,083	154,127	197,210	12.00	21.85
Physics	32,705	159,393	192,098	11.69	17.03
Academic res/planning	7,516	154,365	161,881	9.85	4.64
Center for Educ. Design	8,170	132,929	141,099	8.59	5.79
Mathematics	6,088	87,746	93,834	5.71	6.49
Management	360	80,100	80,460	4.90	0.45
GFDI	9,752	33,628	43,380	2.64	22.48
Chemistry	12,083	30,324	42,407	2.58	28.49
Totals:	119,757	1,125,944	1,245,701	75.80	9.61

5. Employment of students

	OPS	Undergrad Students	Graduate Students
FY 1974	$ 90,000	30	5
FY 1977	157,000	39	2

The number of students were taken from a sample payroll. They are not averages or totals over a year.