

SIMON FRASER UNIVERSITY

MEMORANDUM

To.....	ALL MEMBERS OF SENATE, DEPARTMENT CHAIRMEN AND OTHERS NORMALLY RECEIVING SENATE PAPERS	From.....	I. B. KELSEY DIRECTOR OF SECRETARIAT SERVICES
Subject.....	ADDITIONAL SENATE PAPERS FROM SENATE MEETING OF DECEMBER 7, 1970	Date.....	DECEMBER 29, 1970

Attached are two papers (S.437a, S.437b) circulated to Senators prior to the Senate meeting of December 7, 1970. They accompany Paper S.437, dealing with the new program in Computer Science, and are being distributed at this point for the information and records of Senators, Department Chairmen and other individuals normally receiving Senate papers.

Att.

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SIMON FRASER UNIVERSITY

S. 437 a

MEMORANDUM

To..... Members of Senate

From.. Dr. E. M. Shoemaker, Acting Head

Mathematics Department

Subject..... COMPUTING SCIENCE

Date.. December 3, 1970

Attached is a statement by the Mathematics Department,
intended as a rebuttal to the report of the Academic Planning
Committee in its recommendations regarding the Computing Science
program.

The Academic Planning Committee has recommended that the Computing Science program be included in the division of general studies. The Mathematics Department disagrees with this recommendation and would like to make the following arguments as a refutation of the committee's report and as a support of its own view.

The committee presents on page 3 of its report four arguments in favour of its conclusion. Of these, points (a) and (d) are the same, or rather point (d) presents evidence to justify point (a). As regards point (a) itself, we would suggest that, the fact that a program is inter-disciplinary is not justification for incorporating it in the division of general studies. If it were, then several of our existing departments must also be so incorporated, for example economics and commerce, modern languages, bio-sciences, and mathematics itself, all of which offer inter-disciplinary programs. While we do not wish to argue against the possible value of the new division in certain cases, we do believe that it should not be used as a universal vehicle for every new venture which departs from the narrow lines of the classical disciplines. This would only serve to make even narrower the interests of the existing departments.

It is hard to disagree with point (b), since no one can deny that all things are possible. Of perhaps more concern, however, is the question as to whether the eventuality envisaged in this point is not merely possible but probable. In this connection we would suggest that the record of the mathematics department speaks for itself. We already mount a large number of service courses oriented towards non-mathematics majors and non-science majors (and would mount even more if our budget allowed it). In designing these courses we have been a hundred percent responsive to the suggestions of other departments and of students. In addition to this, we would point to the research interests of our department, which are wider than almost any other mathematics department on this continent. Thus there would appear to be very little evidence in favour of the probability that computer science would be restricted to a scientific orientation if it were introduced by the mathematics department; in fact the evidence points to the contrary.

Finally, point (c). One wonders if the academic planning committee really believes that a computing science program would be probationary. If so it must be closing its eyes to the evidence of almost every other University, where computing science programs are thriving and established parts of the academic life. To be sure, the program would be experimental, but not more so than many of our other programs, which are undergoing continual review and change.

It is perhaps worth pointing out also that the proposals for implementation of the computer science program which are made in the committee report are identical with the proposals previously submitted by the mathematics department, even though the language of the report might lead the reader to believe that they originated with the committee.

Turning now to the positive side, the arguments for retention of the program within the mathematics department were put in part by the report:

(a) With its existing core of applied mathematicians and computing science specialists the mathematics department offers an environment in which the proposed program could be fostered.

(b) Within the mathematics department, the program can be oriented to meet the needs of the entire University community.

(c) Putting the program in the division of general studies would add an unnecessary administrative burden by introducing yet another committee structure.

We certainly agree with these arguments, and our discussion above lends support for (a) and (b). As regards point (c), the academic planning committee is curiously silent, yet the point is surely a strong one: the administrative cost of introducing computing science within the mathematics department will be a small addition to existing costs; within the division of general studies it will represent a whole new item. This matter must be considered very seriously at a time when the University is experiencing a budgetary squeeze.

In addition to these three points, there are others which we should like to make, since the committee is apparently unwilling to make them for us. Firstly, the committee anticipates the appointment of a senior academic in computing science - a step which we fully support. Now within the terms of reference of the division of general studies, such an appointment would carry no right to tenure. The probability of attracting any reputable senior academic under such circumstances must be very slim indeed.

Beyond this there is the broader question as to whether the computing science program fits into the framework of the division of general studies as outlined in the report on the division approved by Senate. An examination of the relevant points, 2(a)-(e), of that report, shows that the computing science program does not at all fit in. To take the points in order: Firstly, it is stated that a reduction in administrative costs would result from including a new program in the division; we have indicated above that for computing science the opposite would be very much the case. Secondly, it is suggested that a unified treatment of all new programs would result from such an inclusion. While we do not dispute the possibility of this, we would argue that it is equally important to ensure a uniform treatment of new programs and our existing programs, particularly when, as with computing science, over half of the courses that a prospective major would take

are already given by a single existing department. Thirdly it is stated that inclusion of a program within the division would help to break down departmental resistance to the program. Where, we would like to know, is the source of this 'departmental resistance' to computer science? Finally, it is stated that procedures for non-standard appointments are easier to envisage within the new division than within the existing departmental structure. This may be true in some cases, but we deny its applicability to our own department: our willingness to make non-standard appointments is governed solely by demand and the availability of funds.

One final point, which perhaps concerns ourselves more than the University as a whole, is that we would like to see computing science within our department as a means of strengthening and increasing the breadth of our own academic interests. We do not wish to be squeezed into a little pigeon hole which happens to have been labelled 'Mathematics' by an academic planner. But while this matter may be of immediate concern only to ourselves, we would suggest that neither is it in the best interests of the University to adopt a philosophy which deliberately restricts the breadth of departments. This is only to hinder, not foster, the growth of inter-disciplinary programs.

SIMON FRASER UNIVERSITY

S. 437 b

MEMORANDUM

To.....Members of Senate.....

From B.G. Wilson,.....

Chairman, Academic Planning Committee

Subject.....

Date.. December 4, 1970.....

The Senate Agenda contains a recommendation from the Academic Planning Committee regarding the organization of a Computer Science Program at Simon Fraser University. This recommendation includes a description of the initial phase of such a program which would appear to offer a good basis from which students could subsequently move to a major in that field. The question of the orientation of such a major has been the subject of considerable discussion, considerable support having been given to the idea that the program at S.F.U. should lean towards computer management rather than computer science, within the Faculty of Science, an approach common to most other universities.

The Academic Planning Committee took the view that this question need not be faced at the present time and in fact it might be possible to have two orientations to a Computer Science Program depending on student demand and interest. The initial phase, however, as presented recently by the Department of Mathematics contains basic courses, most of which would be essential prerequisites to either of the final orientations discussed above, or indeed other directions for a computer science major.

Dr. E.M. Shoemaker has circulated on behalf of the Mathematics Department what is described as a rebuttal to the report of the Academic Planning Committee and its recommendations regarding the Computer Science Program. Since the Academic Planning Committee report is based in content on the Mathematics proposal, there is no issue between the Mathematics Department and the Academic Planning Committee on this point. Rather the very real concern of the Mathematics Department is to see that the overall direction of the program may be removed from the Mathematics Department which currently offers courses in computer science and which would have controlled the development of computer science under the original proposal from the Faculty of Science.

It must be admitted that part of the difficulty experienced by the Mathematics Department, and probably many others as well, stems from the unfortunate use by the Academic Planning Committee of the phrase General Studies in two quite different contexts. At the Senate meeting in November, a Division of General Studies was approved as an administrative structure which would facilitate the mounting of interdepartmental and experimental programs and courses. In the Senate Agenda paper for December, a Bachelor of General Studies Program is recommended, based on a modification of present B.A. and B.Sc. requirements. The reason for this confusion is historical in that an original paper to the Academic Planning Committee encompassed these two very different proposals. The Academic Planning Committee at that time separated the two issues but, as the proposals have been written up, the same title encompasses both ideas. It is clear that much of the confusion which has existed as a result of this ambiguity, might have been dispelled by the use of a title such as Division of University Programs or Division of Special Programs.

The Academic Planning Committee Recommendation therefore should be viewed as a University, or Senate, program in computer science, administered by an interdepartmental committee consisting of faculty members with specific interests in computing science, whether disciplinary oriented, application oriented, or systems oriented. This committee would be the standing committee within the Division of "University Programs" but the members would almost inevitably be members of specific departments within the Faculties of Arts, Science and possibly Education. The courses would be offered within these Faculties and departments and, if a computing science major, in the more traditional discipline oriented sense, is subsequently approved by Senate, it would seem likely and logical that a candidate would obtain a B.Sc. in this subject area. Similarly, if a major was developed in systems management, the student might obtain a B.A. or M.A. degree, in such a program taking many of his courses from current and future offerings by the Department of Economics and Commerce.

The Division of General Studies ("University Programs") exists as a device whereby such interdepartmental programs can be mounted without specific control being exercised by departments in areas where the subject matter is of much more general interest than encompassed within a single department. It also exists to provide a budgetary input into a program area, where university policy suggests that specific assistance should be given because of increasing student demand, where it might be difficult to justify additional appointments in certain participating departments where student demand is low compared to present faculty resources.

The concern of the Department of Mathematics is a natural one but is based, in my view, in part upon a misconception of the intention of the Academic Planning Committee. I do not wish to respond in detail to the "rebuttal" offered by the Department of Mathematics to the proposal to be considered by Senate next Monday. However, I would like to make the following points. It is not that the program is interdisciplinary that we suggest its incorporation in the Division of General Studies. It is because it is multi-departmental and the Department of Mathematics seems to ignore the fact that computer science courses are currently taught within the Department of Economics and Commerce and it would not seem unlikely, if one followed a traditional development, that specific courses in the area of computer science might be offered by other departments. The examples given of Economics and Commerce, Modern Languages, Bio Sciences, and Mathematics itself are really examples of departments with multiple disciplines rather than interdisciplinary studies themselves. Since I am new to the campus I cannot offer comment about the record of the Mathematics Department in providing service courses oriented towards non-mathematics majors and "the 100% responsiveness to the suggestion of other departments and of students." I do note, however, that statistics courses seem to appear, under a variety of headings, as course offerings by departments other than the Mathematics Department. The probationary nature of the program relates not to what has happened at other universities but the degree of student response and the direction of student interest in subsequent phases of the program which are not yet clear at Simon Fraser. Further, the cost of the program can be identified much more easily under the suggested format than if the program was imbedded within several departments.

Senate will have to make up its own mind whether, with its existing core of applied mathematicians and computing science specialists, the Mathematics Department offers an environment in which the proposed program could be fostered better than under the mechanism suggested by the Academic Planning Committee. The two alternatives are clearly set out in the report of the Academic Planning Committee which, while it includes its own specific recommendations, also spells out the alternatives in detail.

What about administrative costs? The structure proposed suggests the formation of an interdepartmental committee to administer the program. If the Mathematics Department proposal were to be accepted, presumably the Mathematics Department would, from time to time, set up a committee including representatives from other departments to obtain expressions of interests and advice regarding further developments. The Department of Economics and Commerce would presumably do the same. Other costs would be identifiable with faculty identified in the program and would be spread over several departments under either proposal. It is difficult to see that in this particular instance, whether there would be much difference in administrative costs.

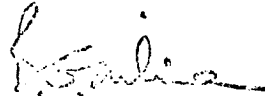
The Mathematics Department "rebuttal" makes points not raised by the Academic Planning Committee. The question is raised about the senior academic in computing science. It is stated that such an appointment would carry no right to tenure. This might only be so if the individual appointed was not acceptable to the Department of Mathematics and/or the Department of Economics and Commerce or other department within the University. For example, if he was a computer science/numerical analyst of high quality would he not be acceptable within the Department of Mathematics? If his orientation was computer science/systems, he might well be an acceptable candidate in the Department of Economics and Commerce. It is anticipated by the Academic Planning Committee that almost all appointments made, with responsibilities to the Division of General Studies, will in fact be based in current departments; consequently the appointments would lead to tenure in the normal way. In any event, it seems to me that high quality appointees are usually people who worry least about tenure since they can move with considerable freedom from campus to campus.

Finally, let me comment on the last paragraph of the document presented by the Mathematics Department. It is not the intention of the Academic Planning Committee to create some kind of monster which will force departments into "pigeon holes" and to restrict flexibility in program development. Our entire emphasis is in fact to introduce interdepartmental flexibility of academic faculty beyond the limits within which any department can have expectation of autonomous growth. Further we hope to limit duplication of course material in offerings presented by different departments.

In the present case, one can certainly see that the role of the Department of Mathematics would be more limited if the Academic Planning Committee report is accepted. On the other hand, academics from at least one other department, would have greater opportunities to contribute to computer

science development. In other cases, where the Mathematics Department would have difficulty in establishing its "rights" to mount specific programs, mathematicians are likely to have greater access to program formulation and participation than heretofore.

The statement of the Mathematics Department is a persuasive document, in part because it is written by people who have real concern about the suggested development and in part because it shows that many of the reasons which led to the setting up of the Division of General Studies have no application to the Computer Science Program. The Academic Planning Committee has never held the view that all of the reasons which led to the formation of the Division of General Studies apply to every specific program which might be organized in this way, so that the fact that several such reasons are not relevant to the Computer Science Program does not mean that they are relevant to a criticism of the Academic Planning Committee's recommendations in this particular case.



B.G. Wilson

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