

SIMON FRASER UNIVERSITY

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MEMORANDUM

To Members of Senate

From Brian Wilson

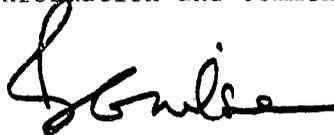
Vice-President Academic

Subject Computer Science

Date November 20, 1970

14733-PC

The attached paper represents a recommendation from the Academic Planning Committee for the establishment of a program in Computer Science. The paper has been circulated to departmental chairmen and through them to their respective faculty members for information and comment.



Brian Wilson

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att.

RECOMMENDATION:

That a program in Computer Science be established and incorporated into the Division of General Studies; that the program be implemented in phases, the first of which is identified in the body of this proposal; that the question of a major in Computing Science should be deferred until such time as there is an opportunity to assess the orientation of Phase I of the Computing Science Program and the extent of demand for such a program.

BACKGROUND DATA:

Computers and computer techniques are having profound impact on modern society. They have revolutionized the approach to a wide variety of disciplines. They have a profound sociological, economic and scientific implication. No branch of science and technology can be predicted to have a quicker growth rate or greater impact or greater potential for the next decade. This potential is recognized by students. There is a great demand in universities across the country for courses and programs in Computing Science. The graduates of such programs are eminently successful in obtaining new positions. The growth rate, in terms of computers and computer technology, is exponential with no immediate end in sight.

There is a correspondingly rapid development in the sophistication of computer techniques and in the development of Computing Science as an established discipline with many broad ramifications. These include such diverse topics as "artificial intelligence" and "integrated information systems".

OBJECTIVES OF PROGRAM:

To develop a series of courses relating to Computer Science which would service the needs of students and faculty throughout the University community; dependent both upon student demand and societal needs, to eventually move to the provision of a sound undergraduate

program leading to a degree with a major in Computing Science as part of the course offerings of the University.

ORGANIZATION:

The administrative organization will consist of a coordinator/director and a coordinating committee composed of representatives from each faculty within the University whose students require access to such program together with the teaching staff identified with the program. The coordinator/director will report directly to the Dean of the Division of General Studies. The Coordinating Committee through its coordinator/director will advise the Dean of the Division on admission of students to the program, \*curriculum, budget requirements and candidates for degree.\*

The arguments for retention of the Computing Science Program in the Mathematics Department included the following:

- a) With its existing core of applied mathematicians and Computing Science specialists, the Math Department offers an environment in which the proposed program could be fostered.
- b) Within the Math Department, the program can be oriented to meet the needs of the entire University community, and
- c) Putting the program in the Division of General Studies would add an unnecessary administrative burden by introducing yet another committee structure.

However, in the opinion of the Academic Planning Committee, these arguments were not as persuasive as those for placing it in the Division of General Studies:

\*It is recognized that some of these responsibilities will come only if a major in Computing Science is eventually approved.

- a) Since the Computing Science program is inter-disciplinary in terms of demand, why not recognize this reality at the outset by incorporating the program in the Division of General Studies?
- b) Location of the program in the Mathematics Department raises a possibility that it will develop an applied mathematics and/or scientific orientation and thus not be responsive to the non-scientific needs of other university departments, and
- c) The program is intended to be experimental and probationary and, under these conditions, it ought to be incorporated in the General Studies Division where the nature of the program and the resources committed to it can be clearly identified.
- d) Already, several departments, among them the Department of Economics and Commerce, offer courses relating to a Computer Science program; given this evidence of the inter-departmental support to be provided to this programme, the inclusion of the programme in the Division of General Studies is warranted.

IMPLEMENTATION:

The first phase of the program will consist of service courses and of core courses at the upper division which will constitute at least a minor in Computing Science. The suggested program of upper division courses will include the following additional courses:

- 401-4 - Data Structures
- 402-4 - Programming Languages
- 403-4 - Computer Organization
- 404-4 - Systems Programming
- 408-3 - Operations Research

At present the Department of Mathematics already mounts 405-4 - Theory of Computability and 406-3 - Numerical Analysis. These, as well as lower division courses, 106-3 - Introduction to Computing and 205-3 - Computers and Programming would be retained. Reflecting the

recommendation of the Academic Planning Committee, consideration of the second and all subsequent phases are being deferred until such time as the core program proves to be successful in attracting students.

The core of the Computing Science Program which we have proposed is based on a recommended program at the undergraduate level in leading universities in North America. There is no doubt that a senior academic appointment in Computing Science will be necessary to provide the leadership and professional competence to implement a first rate undergraduate program. The computing groups will then be in a position to polish the program and to refine the actual core structure.

It is anticipated that the senior academic appointment in Computing Science will be finalized through discussions with the Department of Mathematics. However, it is intended that in addition to representatives of the Mathematics Department, the selection committee will include the Dean of the Division of General Studies and representatives of faculties whose students will require access to the program; the recommendation of the selection committee will be forwarded in the normal way to the vice-president academic for his approval.