NIH RESOURCE

Based on a very strong recommendation from the NIH study section that visited Rutgers back in January, a sizeable portion of our request for support (see PROCEEDINGS Vol. 1 No. 1) was approved. The study section was very favorably impressed by our department, and most of the areas involving computer science faculty were at least partially funded. In view of the current tightness of research funds, we were all quite pleased. Much of the credit belongs to Prof. Amarel who "put it all together".

The resource essentially covers a period of three years, but will be reviewed annually. The initial funding is for a period of 15 months starting June 1. The grant will sponsor, among other things, the research of a number of faculty during the summer and partially during the year. It will also support interactive computing from 3 terminals and 4 research assistants. Other departments supported by the resource are Psychology (RC) and the Ecosystems program (RC).

It is now up to the department to show the people at NIH that their confidence in us was well founded.

GRADUATE STUDENTS UNITED

Around the middle of April the graduate students in the department organized a committee to formally represent the graduate student body. The committee members are: Nannette Yasskin, Steven Just, Doron Steger, John Hazinski, William Meier, Anthony Crosta, Geraldine Francini, James Tankersley, and Ronald Zweig. Graduate student members are currently sitting on various departmental committees. As has been the case all along, graduate students are invited to attend weekly faculty meetings. The only restriction here is the size of our current meeting room. Comments and criticisms made by those students attending these meetings are definitely inputs into any decision making processes.

ACADEMIC COMPUTING - SUPPLY & DEMAND

Prof. Amarel is currently serving as chairman of a University Committee on Planning for Academic Computing; the other members of this committee are from CCIS, physics (RC), Sociology (RC), Mathematics (RC), and the College of Engineering. A first goal of this group is to rationally arrive at projections of University-wide needs for computing resources in the next 3 to 5 years. In order to obtain the information required to make such projections, a questionnaire has been circulated to all deans, directors, and department chairmen throughout the University. This questionnaire attempts to discover the future requirements of each unit of the university with regard to both instruction and research. The projections should be available in time for important decisions on computer resources (involving the University, the State Department of Higher Education, and the Educational Computer Center) which will be made early this summer.

Related to the study described above is an investigation by members of the Computer Science Dept. faculty (R. Orgass, J. Cox) and members of the CCIS staff concerning utilization and performance of interactive computing services.
Demand for interactive computing is growing at the University, with the DCS using about half the current capacity for instruction and research. To satisfy the expected demand for the coming year, improvements or changes in existing time sharing facilities are needed. These are being studied at present. The University has appointed a Technical subcommittee to consider alternative time sharing systems, and ways of going from a system to another without creating serious disruptions to academic activities. Three of the seven members of this subcommittee are DCS faculty members (J. Cox, R. Orgass, and I. Rabinowitz).

CHARTING AN ACADEMIC COURSE

As promised in the previous edition of this newsletter, complete descriptions of our graduate and undergraduate courses are now available. Each description identifies the objectives of the course, its prerequisites, an outline of the material to be (un) covered, the expected amount of work, and a list of relevant references. Both the graduate and undergraduate booklets contain a flowchart-like representation of the curriculum. This graphical description should be of aid in grasping the overall organization of our program and, in particular, in understanding how particular courses relate to one another. It is our hope that this will be useful to students in planning their programs. In the undergraduate booklet a number of specific course sequences are suggested for the non-major interested in gaining some computer science background.

An update of the graduate course descriptions (including new courses to be introduced by new faculty) is planned for sometime in June.

FLIERS

A flier describing our graduate program is currently winging its way to most of the colleges and universities across the country. Plans are currently underway to put together a similar undergraduate flier which will be sent to various high schools and junior colleges. The undergraduate flier will briefly explain what computer science is, the mathematical background required, related job opportunities, and the program at Livingston College.

COMPUTER AIDED EDUCATION

There are a number of people who have become actively interested in CAI. At Rutgers, a committee consisting of members of the Computer Science Department faculty (Prof. Paull and Prof. Cox) and members of the CCIS staff (Pat Skarulis and Jean Bonney) are currently looking into what is currently available in the way of programs and devices. The CCIS staff has acquired a copy of IBM COURSEWRITER which will become useable shortly. Prof. Beaucage in the Computer Science Department and several people in the Mathematics Department at Rutgers College are exploring the use of computers as aids in teaching courses on elementary calculus. ECC has taken on the job of trying to coordinate the many CAI efforts going on around the state.

BRING PRAISE, COMPLAINTS, SUGGESTIONS AND QUESTIONS TO:

There are a number of departmental committees whose job it is to consider problems in their specific domain prior to consideration by the entire Computer Science Department faculty. Several of these committees have graduate student members on them. People with praise, complaints, suggestions or questions in one of these specific areas would be advised to get in touch with the appropriate chairman. For reference we list the committees and their chairmen below.

Departmental Student Advising-S. Baxendale Undergraduate Examination and Scholastic Standing - R. Orgass Subcommittee on Undergraduate Mathematics in Computer Science - R. Orgass
Subcommittee Undergraduate Instruction for
Non-Majors - M. C. Paull
Terminals - J. Cox
CAI - M. C. Paull
Undergraduate Curriculum - S. Amarel
Graduate Admissions - S. Baxendale
Graduate Curriculum - M. Paull
Graduate Examinations & Scholastic
Standing - F. Fender
Graduate Assistantships & Fellowships
S. Baxendale
Scheduling - F. Fender
Computing Resources - I. Rabinowitz
Departmental Space - R. Orgass
Colloquia & Technical Publications
C. Srinivasan
Library Acquisitions - G. Falk
Newsletter, Brochures - G. Falk

NEW BUILDING

Baring strikes or any other unforeseen forms of bad luck, our new home at the University Heights Campus is scheduled to be delivered to the university at the end of November. The actual move by our department would then occur probably during the semester break.

Professor Orgass has been in charge of seeing that the departmental requirements of office space, chalk board, phone lines, etc. are met.

Where the department will be housed for the first semester next year has still not been finalized.

NEW FACULTY

We are hoping to have five new members join the Computer Science Department faculty as of September. As of now three of the five have been appointed. The next edition of this newsletter will formally introduce all of our new colleagues.

COMPUTER SCIENCE COLLOQUIA

The computer science colloquia provide one means of keeping up to date in a rapidly growing field. While attendance this spring has been good, a significant number of graduate students have not yet recognized the importance of these talks to their professional development. I would again strongly urge students (especially Ph.D. candidates) to try to plan their schedules so as to be able to attend the colloquia next fall.

The talks this semester were:

Tree-Manipulating Systems and Church-Rosser Theorems - Dr. Barry K Rosen, Harvard University.


Contributions Toward Medical Diagnosis by Computer - Dr. Benjamin Kleinmuntz, Carnegie-Mellon University.

Extended Precedence, Bounded Right Context, and Deterministic Languages - Dr. Susan Graham, Courant Institute, N.Y.U.

Data Graphs and Addressing Schemes - Dr. Arnold Rosenberg, IBM (Yorktown Heights)

IFF Programs - Prof. Dennis Tschritzis, University of Toronto

Properties of the Working Set Model - Prof. Peter J. Denning, Princeton University.

An Adaptive Linguistic Model for Pattern Recognition - David Rothenberg, Inductive Inference Inc.

A Data Structure for Semantic Information Processing - Stuart E. Shapiro, University of Wisconsin.

Inclusive Semantic Memory Structures - Dr. Ross Quillian, Bolt, Beranek, and Newman, Inc.

A Heuristic Technique for Solving a Class of Combinatorial Optimization Problems - S. Lin, Bell Telephone Laboratories, Murray Hill, N. J.

Optimal Representation of Finite State Machines For Computer Simulation - Dr. Edward Wilkens, Bell Telephone Laboratories (Holmdel).

TALKS, PAPERS, AND COMMITTEES

Prof. Orgass is serving as a member of the program committee for the December 1971 meeting of the Association for Symbolic Logic in New York. The meeting is also sponsored by the American Philosophical Association.

Prof. King served as program chairman for the 8th Annual National Information Retrieval Colloquium (ANIRC) that was held May 6-7 in Philadelphia.

Prof. Srinivasan is serving as a member of the Technical Committee on Design Automation of the (IEEE) Computer Society. He is also serving on the Technical Committee on Fault Tolerant Computer Design of the (IEEE) Computer Society. Prof. Srinivasan presented a paper "Similarity Representation of Systems of Relations and Associated Isomorphism Problems" at the Princeton Conference on Information System Sciences in March. He has two papers that will appear in the IEEE Transactions on Electronic Computers later this year. They are "Coding for Error Correction in Memory Systems, Part I - Correction of Defective Cells in Integrated Memories" and "Coding for Error Correction in Memory Systems, Part II - Correction of Temporary and Catastrophic Errors."

Prof. Kulikowski attended the Princeton Conference on Computers in Health Care in April. He also attended the annual Classification Society meeting at London, Ontario and gave a lecture entitled "Karhunen-Loeve Expansion and Discrimination" at the University of Toronto Electrical Engineering Dept. on May 6 and 7. Prof. Kulikowski will have two articles published this July, "Discriminatory Dimensionality Reduction" will appear in the IEEE Transactions on Information Theory and "A Comparison of Methods for the Automatic Diagnosis of Thyroid Dysfunction" will appear in Computers and Biomedical Research. Prof. Kulikowski is continuing his association with the Straub clinic in Hawaii, consulting with them on the implementation of a system for the automatic diagnosis of thyroid dysfunction.

Prof. Falk will present a paper entitled "Scene Analysis Based on Imperfect Edge Data" at the 2nd Joint International Conference on Artificial Intelligence in London this September. He is also the joint author of two other papers; one entitled "The Use of Vision and Manipulation to Solve the Instant Insanity Puzzle" will also be given at the AI conference in London; the other entitled "A Laboratory for Hand-Eye Research" will be presented at the IFIP 71 Congress in Ljubljana, Yugoslavia in August.

Prof. Paull is serving on a committee sponsored by the New Jersey State Department of Higher Education which is considering computer science education throughout the state.

Prof. Amarel has been appointed to a four year term as a member of the National Institutes of Health Chemical-Biological Information-Handling Review Committee. At the IFIP '71 Conference in August, Prof. Amarel will chair the session on Artificial Intelligence. At the Jerusalem Conference in Information Technology (Aug. 16-19) he will co-chair a panel (with Dr. M. Kochen, U. of Michigan) and present a paper entitled "Computers in Educational Systems of Developing Nations." Prof. Amarel was also one of the organizers of the Second Joint International Conference on Artificial Intelligence that will be held Sept. 1-3 in London, England.

DEPARTMENTAL TECHNICAL REPORTS

A number of new departmental technical reports are in the final stages of preparation and will be available shortly. They are:

#6 'Obtaining a Grammar From a Less Formal Language Description' - by Marvin C. Paull.

#7 'Equivalence of Some Classes of Algorithms' - by Marvin C. Paull.

#8 'Notes on Minilogo Interpreter' - by Charlene Paull

#9 'Sets of Set Equations Equivalent to Context Free Grammars and Their Solution' - by Marvin C. Paull.

FIRST WRITTEN MASTERS/PH.D. EXAM

The first written Masters/Ph.D. exam was given in mid-May. As is universally the case, the event was followed by a large number of sighs, curses, and groans. As is also universally the case, the people who took the exam found that they did not do as poorly as they feared.

Seven out of nine graduate students passed it. Of the five M.S. students, four passed. The student who failed was advised to take the exam for a second time. For the four doctoral students, the written exam is the first part of the qualifying exam for Ph.D. candidacy. One of the doctoral students showed serious deficiencies and was asked to repeat the written exam after further study. Two of the doctoral students showed weakness which they were advised to correct between now and the oral part of their qualifying exam. The fourth doctoral student passed honorably.

ACM STUDENT CHAPTER

Prof. Droege has been and is currently serving as advisor to the Rutgers ACM Student Chapter. She reports that the 3 student officers of the chapter for next year will be Donald Young, Mathy McCrea, and Peggy Clark, all Class of '73 at Livingston College. They are currently in the process of planning next year's activities. The first meeting next year will be held late in September.

COORDINATION OF CURRICULUM WITH OTHER UNITS OF THE UNIVERSITY.

The Computer Science Department is currently interacting with the College of Agriculture and Environmental Science and the College of Engineering on the subject of introductory computing courses. The purpose of these interactions is the formulation of clear academic goals and the design of courses that mesh well with our overall curriculum. Initial exchanges are encouraging and progress is being made. The departmental subcommittee on undergraduate instruction for non-majors (chaired by Prof. Paull) is playing a key role in these interactions.

We are also in close contact with the mathematics department at Rutgers College. They are beginning to use computing extensively as a motivating and exercising mechanism in their introductory math courses. Next fall they plan to have 6 sections (about 150 students) on this "new math". Many of their ideas parallel our own ideas concerning 105-106. Active in this area is the departmental subcommittee for undergraduate mathematics instruction in computer science (chaired by Prof. Orgass).