C.&I.S. doctoral student, Ilchoo Chung, demonstrates skill on new Apple II microcomputer

C.&I.S. Acquires New Computer

The C.&I.S. Research Program has acquired an APPLE II PLUS microcomputer and a QUME Sprint 5 printer and terminal (with keyboard).The APPLE II PLUS has 48K RAM with Applesoft BASIC (with floating point) programming capabilities. A language system circuit card enhances the programming capabilities to include Integer BASIC and Pascal. High and low resolution graphics are also built in. Serial and parallel interface circuit cards permit the addition of letter quality, high speed printers and a Micromodem provides communications option.

The system has two disk drives utilizing mini-floppy disks. It can ultimately support up to six drives. At the present time, a black and white video monitor is being used for display.

The printer is the Sprint 5 daisy wheel model that can be used as a terminal to access the UCLA IBM 3033 as well as input to the APPLE. The printer provides a level of quality similar to that currently available on dedicated word processors.

There is a large selection of software that will run on the APPLE, including data base management and word processing packages. Currently, two major business software offerings, the Cashier and the Controller, are available for use.

The APPLE system provides both faculty and doctoral students the opportunity to research potential applications of the microprocessor for management purposes and general information display. □

Planning Meeting for Conference On Information Systems Held at GSM

On Friday and Saturday, May 16th and 17th, thirty-four MIS academicians and professionals met at the Graduate School of Management to discuss plans for the upcoming Conference on Information Systems. (For further details on the Conference itself, see box on page 2.) The meeting was convened by **Marty Bariff** (Case-Western Reserve), **Gary Dickson** (Minnesota), and **Eph McLean** (UCLA) and was hosted by the Computers and Information Systems area at UCLA.

All but four of the invited participants were able to attend and the meeting represented one of the most comprehensive gatherings of information systems specialists in recent years. Editors of four of the major MIS journals were present: **Bob Ashenhurst** (Chicago), senior editor, *Communications of the ACM;* Gary Dickson (Minnesota), senior editor, *MIS Quarterly,* **Charles Kriebel** (Carnegie-Mellon), information systems editor, *Management Science;* and **Ed Sibley** (Maryland), senior editor, *Information and Management.*

The planning meeting was sponsored by 14 universities and organizations in addition to the three main professional societies: ACM (Special Interest Group on Business Data Processing); SMIS (Committee on Research and Education in Information Systems), represented by **Bill Getz** (General Services Administration) and **Dick Dooley** (Colonial Penn Insurance); and TIMS (College on Information Systems), represented by **John Henderson** (Pennsylvania).

The discussions lasted for two full days and dealt with all aspects of the upcoming Conference. Almost all of the attendees agreed either to prepare a paper for delivery at the Conference or to help in some other manner. In addition to the original three members of the organizing committee who agreed to serve as conference chairmen — Gary Dickson as overall chairman (assisted by **Naomi Estes** who works with him at Minnesota), Marty Bariff as program chairman, and Eph McLean as publications chairman — **Jim Emery** (Pennsylvania) agreed to be arrangements chairman and **Dick Hackathorn** (Colorado), doctoral consortium chairman.

The other attendees included **Izak Benbesat** (Minnesota), **Dan Couger** (Colorado), **Gordon Davis** (Minnesota), **Mike Ginzberg** (Columbia), **Charles Hickman,** (AACSB), **Jeff Hoffer** (Case Western Reserve), **Peter Keen** (M.I.T.), **Ken Kendall** (Nebraska), **Bill King** (Pittsburgh), **Benn Konsynski** (Arizona), **Hank Lucas** (NYU), **Dick Mason** (USC), **Alan Merten** (Michigan), **Jeff Moore** (Stanford), **Jay Nunnamaker** (Arizona), **Karlene Roberts** (UC-Berkeley), **Jack Rockart** (M.I.T.), **James Senn** (SUNY), **Ralph Sprague** (Hawaii), **Burt Swanson** (UCLA), **Richard Welke** (McMaster), and **Jim Wetherbe** (Houston). □

Colloquium Series

The C.&I.S. Colloquium Series continued through the Spring Quarter, presenting issues from computer crime to information modelling. On April 3, **Roger D. Schultz** from Abacus Programming Corporation spoke about the observation and collection of data relating to the actions of EDP systems. His talk, titled "Audit Probes: Tools for Test, Quality Assurance, and Audit" described a generic programming capability which is independent of the EDP system architecture and which facilitates the auditing and testing of transaction oriented processing systems.

Thomas H. Martin, Assistant Professor at the Annenberg School of Communications at the University of Southern California, presented his work "Involving Users in Man-Computer Interface Evolution" on April 17. Based upon the premise that improved productivity and a higher quality of working life of information workers can be obtained by fitting new technologies to user interests and limitations, a variety of techniques for gathering user experiences and incorporating them into system redesign were discussed. The use of these techniques in a project with Jet Propulsion Laboratory's Deep Space Network was also described.

"The ELKA Information Model and the Associated Meta Model" was presented on May 8 by **Robert R. Brown,** Chief Scientist of Information Systems at Hughes Aircraft Company. The ELKA model extends the work of **Dr. Peter Chen**'s Entity-Relation Model and applies it to the formal structuring of information systems. Goals of the ELKA model include the provision of a convenient, clear, understandable, inclusive depiction of an information system which lends itself to many different efficient implementations. The basic model structure as well as an example were provided.

"Advances in Computer Crime" was discussed by **Donn B. Parker** who is a Senior Management Systems Consultant with the Computer Security Program at SRI International. This May 29 colloquium focused upon the results of a nine year study and related computer abuses to the changing computer technology environment. It was found that computer security aimed at reducing intentional acts was also effective against accidental loss but that the reverse was not true. Computer enemies of the 1980's were identified as organized crime, political advocates, and foreign powers.

The Colloquium Series will not be held on a regular basis during the summer, but will resume its usual schedule during the Fall Quarter. Announcements will be distributed prior to the first lecture. □

Delone Receives IBM Fellowship

William Delone was chosen as the Computers and Information Systems IBM Doctoral Fellow for 1980-81. The IBM Fellowship, first awarded in 1977, provides support for a C.&I.S. student who is at the dissertation stage of his or her doctoral studies. The fellowship provides tuition and fees as well as a quarterly stipend. As a result of this financial support, the student is able to concentrate directly on research, without the need to seek out part-time employment.

In 1970, Bill earned his M.S. degree at Carnegie-Mellon. Bill is an associate professor of business administration at the College of the Virgin Islands, but is currently on leave to complete his doctoral studies. Bill entered the doctoral program in the Fall of 1978, concentrating in Computers and Information Systems. He has passed his major field exams and expects to receive his Ph.D. in September of 1982.

Bill and his wife, Patti, and their two children are presently residing in the Los Angeles area. Upon completion of his Ph.D. degree, Bill and his family will return to the Virgin Islands. □

Moskowitz Recipient of C.&I.S. Associates Award

DuWayne Peterson, Chairman of the C.&I.S. Associates, congratulates Breyne Moskowitz on winning the C.&I.S. Associates Award for 1980

Mr. DuWayne Peterson, Executive Vice President of Security Pacific National Bank and this year's Chairman of the Computers and Information Systems Associates, presented the first C.&I.S. Associates Award to **Breyne Moskowitz.**

The C.&I.S. Associates Award is given to the graduating MBA student who has attained the highest academic achievement in the C.&I.S. area. A special plaque is being established which will have the name of this year's winner, and the names of future winners, engraved on it. In addition, a personalized certificate is awarded; and — probably most significant from the student's standpoint — a check for $250.

Dr. Moskowitz received her MBA in June of this year and is presently employed by Hewlett-Packard as a marketing representative. Before joining the master's program in GSM, Dr. Moskowitz was an assistant professor at UCLA, teaching undergraduate and graduate level courses in the linguistics department. She obtained her Ph.D. in Linguistics at University of California, Berkeley in September of 1971. □

Conference on Information Systems

The First Annual International Conference on Information Systems will be held in Philadelphia, Pennsylvania, on December 8-10, 1980, at the Holiday Inn, directly across from the University of Pennsylvania campus.

The Conference will devote special attention to information systems as an academic discipline and its relationships to its underlying and supporting disciplines. In addition, current MIS research will be presented and issues of MIS teaching for masters students, doctoral students, and executives will be discussed. A consortium of doctoral students from leading MIS Ph.D. programs around the country will also be held in conjunction with the Conference. A full Conference Proceedings will be published and distributed to all attendees.

Dr. James C. Emery of the Wharton School is in charge of local arrangements and the executive secretariate of the Society for Management Information Systems (SMIS) is handling the registrations and other conference arrangements. For further details, write: Conference on Information Systems, SMIS, 111 East Wacker Drive, Chicago, Illinois 60601.

Tucker Addresses Associates

Charles Tucker, emphasizing a point during his talk on MIS planning

As organizations become more dependent upon the MIS function, proper planning becomes vital to ensure that the role played by MIS will be congruent with the organization's goals and objectives. Strategic planning for MIS was thus the subject of the Spring 1980 Associates Lecture by **Charles C. Tucker.** Mr. Tucker is currently the Vice President of Planning and Information Services at Twentieth Century-Fox Film Corporation. His lecture, described below, addressed the information systems planning methodology being used by Twentieth Century-Fox which is based upon IBM's Business Systems Planning Methodology.

Information Systems Planning Background

Historically, information systems have been developed for the accounting and operational areas of business units. Experience has shown that this approach does not necessarily address the information needs of management. Management requires quality information about what is happening in order to evaluate various alternatives for the investment of the organization's resources. Information that is too old is of little use. Information must be properly managed or it will be of little value in the decision-making process. The methodology used at Twentieth Century-Fox specifically addresses the problem of managing resources more effectively through the management of information.

The development of a strategic plan for information systems designed to support the overall organization is essential to the management of information, and insures that:

- The short term investments of information systems resources are supportive of the long term goals of the organization.
- Maximum short term benefit is derived from the investment of information systems resources.

Information Systems Planning Methodology

The basic planning methodology used at Twentieth Century-Fox involves the following steps: (1) Projection of the future business environment and its possible implications for information systems development; (2) Development of a structured description of the organization based on its operations and definition of the information it uses; (3) Design of a network of information systems that will support the organization and manage its information; (4) Identification of current information problems and determination of priorities for addressing these problems; (5) Review of the way that the development of information systems is currently managed; and (6) Development on an action plan that balances needs and capabilities.

Performance of these six steps results in a framework within which subsequent phases of development can then be undertaken with the assurance that interfaces, needs, and priorities can be measured, evaluated, and modified as dictated by the needs of the organization. Each of these steps is explained in more detail below for the Feature Film Division of Fox.

Step 1: Project Implications of Future Business Environment. The external and internal business environment is analyzed in order to project its implications for future information systems. Conclusions about the industry and division performance relative to the industry are drawn. A projection of the future industry environment is made based on executive interviews and past trends. Information systems implications of this expected environment are derived.

Step 2: Understand the Organization and Its Information Needs. Three analyses are performed to understand the organization and define the information needed to support it. (1) A structured description of the division is developed to serve as a basis for analysis. The structure is based upon processes, which are defined as "a group of logically related activities or tasks that are carried out in order to manage a resource or provide a service"; (2) The departments involved with each process are identified; and (3) The data required to perform each process are identified. The completion of this step provides a comprehensive overview of the division, illustrating a relationship between the activities or processes being performed, the organizations performing those processes, and the information required to perform the various processes properly.

Step 3: Design a Network of Information Systems. This step logically groups the processes and data classes in a manner that reflects the total operation of the division and at the same time provides a mechanism to facilitate the management of information. This logical grouping of processes and supporting data classes into information systems becomes the information systems network, the framework for the Information Systems Plan (ISP).

Step 4: Identify Problems and Determine Priorities. Division executives are interviewed in order to obtain their input. The primary objective of these interviews is to identify management problems and to determine the benefit of resolving the identified problems. The interviews are structured so that they provide consistent information and thereby facilitate analysis. The six major categories of discussion are: (1) Their business objectives; (2) Problems experienced in meeting these objectives; (3) Information required to accomplish their objectives; (4) Benefits attainable from having the required information; (5) Business changes expected over the next five years; and (6) Their evaluation of current automated information systems. After analysis of the interview findings and the network, conclusions are drawn relative to establishment of priorities for addressing these problem areas.

Step 5: Review Information Systems Management. The policies and procedures currently used to manage the development of information systems for the division are reviewed. This includes documenting the major characteristics of all existing automated information systems serving the division, reviewing previous audit reports concerning the EDP Department analyzing past cost and manpower trends, and assessing user satisfaction from the executive interviews.

Step 6: Develop an Action Plan. The final step is to balance the information needs identified with the current capabilities for developing information systems, and sequencing the implementation steps in a logical manner.

DuWayne Peterson, this year's Chairman of the Associates, talks with a new member of the Associates, John Bernard of Peat, Marwick, Mitchell & Co., following Tucker's talk.

Information Systems Planning Benefits

The traditional approach to information systems planning has been to plan at the project level. This leads to the development of independent systems, each with its own data, for each user. Most organizations suffer from the following shortfalls that result from this traditional approach:

• Systems that are not supportive of business plans.
• Systems that are not easily adaptable to organizational changes.
• Data that are redundant and inconsistent.
• Systems that are difficult to interconnect.
• "Squeaky wheel" priority determination.

Management views this as creating systems that have short useful lives, that are expensive to operate and maintain, and that support areas with little impact on the overall success of the company.

.   The information systems planning methodology described here overcomes these shortfalls by: (1) Tying information systems plans directly to business plans; (2) Designing systems around business processes so they are organizationally independent; (3) Treating data as a company resource so it can be shared and managed; (4) Laying out the overall network first so the individual systems can be easily interfaced as they are developed; and (5) Providing a logical framework for determining implementation priorities.

Because of Twentieth Century-Fox's investment in information systems planning, they expect that the information systems developed in the future will last longer, cost less to develop and operate, support business plans better, and address the most important information requirements first. □

Bits and Bytes

Professor **E. Burton Swanson** will be serving as next year's curriculum chairman for C.&I.S., replacing Professor **Ephraim R. McLean.** Professor McLean will continue to serve as Director of the Computers and Information Systems Research Program.

The C.&I.S. doctoral program continues to be the second largest area within GSM. There are currently 15 doctoral students majoring in C.&I.S. and six more students are expected to enroll in the Fall.

Les Porter, a C.&I.S. doctoral student, has accepted a position as assistant professor at Harvard University. The position is to become effective in September of 1980.

Alberto Bento successfully completed his dissertation entitled, "The Information Systems Contingency Theory: A Proposal and Test in California Cities" and received his Ph.D.

in June of this year. Professor Bento will be returning to his position at the Universidade Federal do Rio de Janeiro in Brazil.

Professor **Mary Culnan,** a former C.&I.S. doctoral student, has accepted a position as assistant professor at the School of Library and Information Science at the University of California, Berkeley. The position is to become effective in January of 1981.

Professor **Bennet P. Lientz** rejoins the C.&I.S. faculty on a full-time basis after a two year assignment as Director of Administrative Information Services for the UCLA campus. Professors Lientz and E. Burton Swanson have also co-authored a book entitled *Software Maintenance Management*, published by Addison-Wesley this spring.

Professor Swanson presented the paper, "Impact of Development Productivity Aids on Application Software Maintenance" (with Professor Lientz) at the Conference on Application Development Systems, Santa Clara, March 10-11, 1980. He also presented a paper, "Measuring User Attitudes in MIS Research: A Review," at the Joint TIMS/ORSA National Meeting, Washington, D.C., May 4-7. In addition, Burt was a participant in the Planning Meeting for the Conference on Information Systems in Los Angeles, May 16-17 (see p.1 for more details on this meeting), and a panelist in the session on "User Requirements and Software Specifications" at the National Computer Conference in Anaheim, May 19-22. In June, he traveled to Grenoble, France, for the annual meeting of the IFIP Working Group 8.2 on the Interaction of Information Systems and the Organization.

Professor **Ephraim R. McLean** was also a participant in the Planning Meeting for the Conference on Information Systems in Los Angeles, May 16-17. In June of this year, Professor McLean attended a Conference on Decision Support Systems held at the International Institute for Applied Systems Analysis (IIASA) in Vienna, Austria. He was also invited to join and help organize the IFIP Working Group 8.3 on Decision Support Systems which met in Vienna immediately following the IIASA Conference. □

ACM/SIGMOD Conference Well Received by Attendees

Professor **Clay Sprowls** was the general chairman and Professor **Peter Chen** the program chairman of the 1980 International Conference on the Management of Data held at the Sheraton-Miramar Hotel in Santa Monica, California, on May 14-16. This Conference is an annual event sponsored by ACM/SIGMOD, the Special Interest Group on the Management of Data of the Association of Computing Machinery. It brings together researchers and practitioners interested in the problems of managing data in the broadest meaning of the term. The program consisted of seven paper sessions comprising twenty-five papers screened from approximately 90 submissions on the subject of data base design, data and conceptual models, data dependency theories, user interfaces, database machines, distributed data bases, and DBMS implementation experiences. Five panel sessions covered research issues, image and geographical data bases, knowledge-based DBMS, office automation, and database administration and management issues. Approximately 250 people attended the Conference, coming from 10 different countries that included Canada, Germany, Mexico, Turkey, Netherlands, Japan, China, France, and Italy. C.&I.S. doctoral students **Dennis Perry, Eli Harel, Ilchoo Chung, C.K. Farn,** and **Geoff Collier** assisted with the individual sessions, as did MBA students **Mary Miller, Brad Power,** and **Julie Simon. Susan Corley** of the C.&I.S. staff coordinated the administrative work of the Conference. □

Working Papers (Since July 1979)

Number	Author	Title	Date
1-80	Bennett P. Lientz Myles Chen	Assessment of Technology for Information Services Planning	August 1979
2-80	Richard O. Mason	A Theory of the Productivity of Systems which Produce and Distribute Information	September 1979
3-80	Bennet P. Lientz	On the Use of Simulation in the Design and Implementation of Distributed Systems	November 1979
4-80	Phillip Ein-Dor Eli Segev	Organizational Context and MIS Structure — Some Empirical Evidence	January 1980
5-80	Ephraim R. McLean E. Burton Swanson	Management Information Systems: An Academic Perspective	March 1980
6-80	Phillip Ein-Dor Eli Segev	Emergence of a New Organizational Function: The Case of Information Systems	May 1980
7-80	Ephraim R. McLean Thomas F. Riesing	Installing a Decision Support System: Implications for Research	June 1980
8-80	Jacob Akoka Peter P. Chen	Optimal Design of Distributed Databases	June 1980
9-80	Peter P. Chen George Schepens	Two-Dimensional Hashing Method and Comparisons of of Hashing Techniques in Virtual Memory Environment	June 1980

Ordering Instructions

Copies of available working papers may be ordered by sending your request to:

    Computers & Information Systems Research Program
    Graduate School of Management
    University of California
    Los Angeles, California 90024

The papers will be mailed to you along with a $3.00 charge for postage and handling.

Publications (Since July 1979)

1. Neumann, Seev and Segev, Eli. "Evaluate Your Information System," *Journal of Systems Management,* Vol. 31, No. 3, March 1980, pp. 34-41.
2. Lientz, Bennet P. and Chen, M. "A Methodology for Information Systems Planning," *Long Range Planning,* Vol. 22, February 1980, pp. 32-38.
3. Neumann, Seev and Segev, Eli. "A Case Study of User Evaluation of Information Characteristics," *Information and Management,* Vol. 2, No. 6, December 1979, pp. 271-278.
4. Chen, Peter P. (Editor). *Proceedings of the International Conference on Entity-Relationship Approach to Systems Analysis and Design,* North-Holland Publishing Company, Amsterdam, 1980, 663 pp.
5. McLean, Ephraim R. "The Challenge of Systems Analysis and Design," *Proceedings of the International Conference on Entity-Relationship Approach to Systems Analysis and Design,* North-Holland Publishing Company, Amsterdam, 1980. pp. 1-2.
6. McLean, Ephraim R. "End Users as Application Developers," *Proceedings of the Application Development Symposium,* Monterey, California, October 1979, pp. 49-55, republished in *Management Information Systems Quarterly,* Vol. 3, No. 4, December 1979, pp. 37-46.
7. Cooper, Randolph B. and Swanson, E. Burton. "Management Information Requirements Assessment: The State of the Art," *Data Base,* Vol. 11, No. 2, Fall 1979, pp. 5-16.
8. Swanson, E. Burton. "On the User-Requisite Variety of Computer Application Software," *IEEE Transactions on Reliability,* Special Issue on Software Reliability, Vol. R-28, No. 3, August 1979, pp. 221-226.
9. Swanson, E. Burton. "The Evaluation of an Information System Implementation," Syzperski, N. and Grochla, E. (Editors), *Design and Implementation of Consumer-based Information Systems,* Sijthoff & Noordhoff, 1979, pp. 301-306.
10. Neumann, Seev and Hadass, Michael. "DSS and Strategic Decisions," *California Management Review,* Vol. 12, No. 2, Spring 1980, pp. 77-84.

Upcoming Events

MIS Firm Night

The Association of Students and Business (ASB), in cooperation with the C.& I.S. area, will sponsor the annual MIS Firm Night, to be held on the UCLA campus, on November 5, 1980, 4:30 - 7:30 P.M.

Conference on Information Systems

The First Annual International Conference on Information Systems will be held in Philadelphia, Pennsylvania, December 8-10, 1980. The conference is designed to bring together a number of leading scholars and researchers in the MIS field to discuss issues of mutual interest and concern (see p. 2 for more details).

Managing the Information Resource

The second annual offering of the "Managing the Information Resource" program will be held at UCLA's Graduate School of Management on Sunday, February 1, through Friday, February 6, 1981. As before, it will be co-sponsored by **Richard Nolan**'s firm Nolan, Norton & Co. Registration will be limited so individuals wishing additional information should write to Ms. Susan Strommer, Office of Executive Education, Graduate School of Management, University of California, Los Angeles, CA 90024.

Conference on Entity-Relationship Approach to Systems Analysis and Design

The Second International Conference on the Entity-Relationship Approach to Systems Analysis and Design will be held in September of 1981. The conference will be held in Washington, D.C. Details will follow at a later date.

Neumann Returns to Tel-Aviv

Dr. Seev Neumann has been a visiting associate professor in the C.&I.S. area for the past two years. This Fall he will be returning to his position as professor with the Faculty of Management and Head of the Executive Program at Tel-Aviv University, in Tel-Aviv, Israel.

Professor Neumann earned his MBA in 1965 and his Ph.D. in 1967, both from UCLA. Upon returning to UCLA after a more than 10 year absence, Professor Neumann has noticed several changes in the Graduate School of Management. Computers and Information Systems has now become a separate, specialized concentration within the School. The size of the faculty in C.&I.S. has increased, as have the number of masters and doctoral students.

Seev will be returning to his home with very positive feelings toward GSM. "I was extremely happy to be part of the C.&I.S. program. It seems to be, faculty-wise, the most cohesive and pleasant group to work with in GSM."

Seev will continue to be regarded as a member of our extended C.&I.S. family. We wish him the best of luck upon his return to Tel-Aviv. □