Department of
Computing & Information Sciences

A newsletter for the
Department of Computing & Information Sciences
Kansas State University
234 Nichols Hall
Manhattan, KS 66506

Vol. 1, No. 1

Greetings from the Department Head

Dear Alumni,

The Department of Computing and Information Sciences is nearing the end of two decades of service to Kansas State University. We are proud of the things we have accomplished and the achievements of our graduates. In an era of extreme underfunding for a rapidly growing department, one aspect of vital importance has been ignored. We have been unable to keep in touch with the people that give meaning to our mission, our alumni. With the creation of this newsletter, I will keep you informed of the continued progress of the department, and I hope you will find time to contribute to the newsletter with information of interest to your fellow graduates. In order to keep accurate records of those to whom we wish to send this newsletter, we have included an information form for you to return to us with any address corrections.

In this inaugural issue of the newsletter we have chosen to highlight several programs, faculty, students, graduates and facilities. We hope you will find these items of interest, and let us know what else you'd like to hear about.

Are you familiar with the departmental statistics of which you are a part? Let me share some with you. The first degrees in Computer Science were granted in 1968 by the Department of Statistics and Computer Science. In 1970, the Department of Computer Science was created in the College of Arts & Sciences. In that year the department began awarding BS and BA degrees in Computer Science. In 1971 we granted our first MS degrees. In 1972 a joint PhD program was created with the Computer Science Department at the University of Kansas. The first PhD was awarded in 1976. In 1980 a program in Information Systems was created. We have awarded a total of 727 baccalaureate degrees in Computer Science and Informations Systems, and 342 graduate degrees in Computer Science. Our enrollment has varied greatly, going from approximately 125 in 1979 to over 700 in 1983 and down to 600 in 1987. This reflects national trends and the slightly smaller student population has been a welcome situation for overworked faculty.

Several major events in the past five years have been influential in the operation of the department. First, we have moved from a card-oriented processing environment to a totally interactive environment. In 1982, we had only a few interactive terminals for research. Today, we have 140 PCs, 15 minicomputers, three super-minicomputers, 60 interactive terminals, and local area networking to

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Greetings, continued

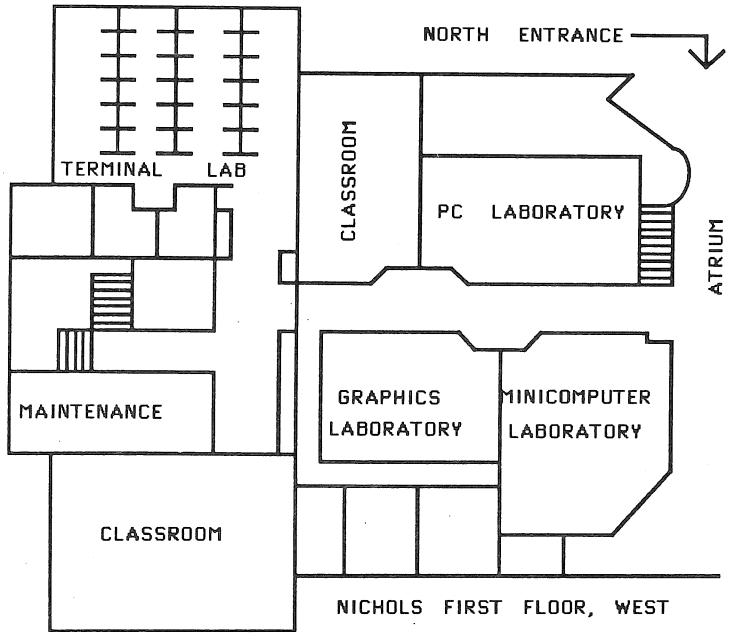
tie them all together. These laboratories are used exclusively by students majoring in Computer Science and Information Systems. Second, the department has moved into the rennovated Nichols Hall. Look for the article on that below. Third, the name of the department has been changed to Computing and Information Sciences. This name more accurately reflects the existing educational and research programs. Information was added to the name to emphasize the presence of the Information Systems program. Computing is the name for the processes we study; "computer" is the artifact that is developed to carry out computing. Another major event has occurred this past year that will have long-range effects on the future of the department. The Kansas Board of Regents reviewed the department. They praised the department as being "exemplary" and included Computing and Information Sciences as a major thrust of Kansas State University in their newly published Mission Statement for the Kansas regents' institutions. Finally, the maturation of our discipline and department is reflected in the fact that we have evolved into a faculty who principally have doctorates in Computer Science. We have developed a more theoretical curriculum in Computer Science, while keeping the lab-intensive nature in place. This prepares students for graduate school as well as industry. The Information Systems major has more emphasis on business systems than in the past. More emphasis is placed on the Pascal and Modula programming languages and less on PL/1 and assembly language. The curricula continue to evolve as fast as our changing technology.

If you want more information about the department, please contact me. If you have suggestions for improving the programs, I would be eager to discuss them with you. I would also like to invite you back to campus to visit the department, faculty and students. We are proud of all of them; and we enjoy rekindling old friendships.

Virgil E. Wallentine, Department Head

Nichols Hall--The "New" Computer Castle

In August of 1985 the transformation of Nichols Gym into Nichols Hall was completed when the Computer Science Department moved into a "high tech" environment within a beautiful medieval structure. The newness has now worn off (along with most of the mechanical problems of a new building) and we are very satisfied with the delightful atmosphere. The building features a two-story atrium, numerous laboratories, and aesthetically pleasing offices and classrooms. All faculty have their offices on the second and third floors along with the administrative offices, a library, a conference room, TA offices, and several small research labs. The first floor contains two environmentally controlled computer rooms, two extensive personal computer and terminal laboratories and two comfortable classrooms. One of the nicest features of the building is the computer networking facility. The building is wired for four different kinds of local area networking along with standard twisted pair and telephone wiring. From any office, lab, or classroom, the computer user can access all of the computing facilities available. A diagram of the building's ground floor plan is included for your reference. Please stop in to see our building if you have the opportunity. It is a magnificent renovation and presents a very professional image of the department. We are always delighted to give tours.



Faculty Profile: Dr. Elizabeth Unger

Beth has been associated with computing at Kansas State University since 1966 when she joined the Computing Center as an applications programmer. Prior to that she worked for IBM and Michigan State University.

Beth came to KSU to teach and earn a doctorate. However, as with many valuable people whose career goals are put on hold because organizations need their talent, she became, successively, Assistant, Associate, and Acting Director of the Computing Center. But administration was not as challenging and interesting as teaching, so in 1974 she began her pursuit of a PhD in Computer Science at the University of Kansas while holding down a full-time teaching position in the department here. In the process, Beth became familiar with every little bump in I-70 between Lawrence and Manhattan!

Since receiving her PhD, Beth has started her second career and has made an enormous impact on the department. She is an outstanding teacher, as many of you know. She has also developed into a very productive researcher. She now heads a group of five faculty members and numerous graduate students who are working in the area of distributed and concurrent processing, an area in which she has published numerous research articles. She also provides the department with credibility across the KSU campus because of her reputation as a faculty leader.

When asked why she is at KSU, Beth replied; "Students are the reason we exist at this university. Research is extremely important within that context because it is through that avenue that we as faculty remain current in the field, stimulated to share new knowledge, and through that knowledge provide opportunities for growth for the students. It is also true that students teach the faculty in the process. This two-way exchange of information is a very exciting aspect of being a faculty member."

She describes her philosophy of education like this: "It is my fundamental philosophy that students are most limited by the image they have of themselves. We faculty members have the job of setting images for individual students of that successful professional and individual they can become."

It is clear that Beth is vitally interested in students as people. She has said that her goals for the department include continuous improvement in the quality and quantity of faculty, growth of research programs, and achievement of a superior national and international computing program.

Beth is the penultimate educator. We are proud to have her in the department and know that she has had a positive effect on hundreds of our graduates.

The Birth of a Conference Series

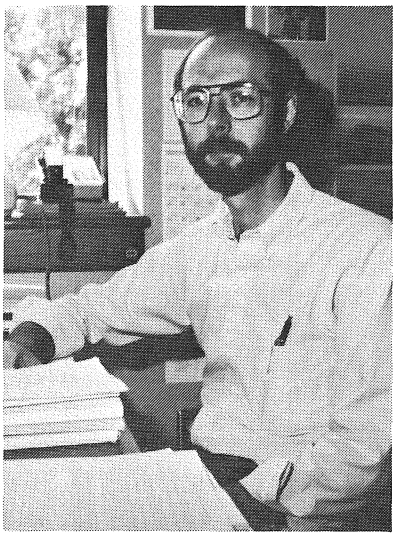
A series of internationally recognized conferences on the "mathematical foundations of programming semantics" (MFPS for short) owes its existence to the efforts of computing sciences faculty at Kansas State University. In 1985 Austin Melton and Elizabeth Unger organized the first MFPS conference, which was held at Manhattan. Researchers attended from the U.S. and Europe, with guest speakers including Dana Scott and Steven Brookes of Carnegie-Mellon University and Horst Herrlich of Bremen University, Germany. The proceedings of the conference, edited by Dr. Melton, were recently published by Springer-Verlag as a volume in its "Lecture Notes in Computer Science" series. A second, smaller meeting was held the following year, again at Manhattan and organized by Austin Melton.

Last April, the third MFPS conference was held at Tulane University in New Orleans. Its four organizers included Austin Melton and David Schmidt from KSU. An international audience heard talks from invited speakers Gordon Plotkin, University of Edinburgh, Scotland, and John Gray, University of Illinois. A proceedings is in preparation and will again be published by Springer-Verlag. Future meetings are planned for Boulder, Colorado in 1988, and in Berkeley, California in 1989.

The meetings provide a forum for researchers who study denotational semantics-based methods for definition, analysis, and implementation of programming languages. Conferences on this topic are almost exclusively held in Europe, and the MFPS series stands as the only one of its kind in the U.S.

Faculty Profile: Dr. David Schmidt

An old face recently returned to KSU's Department of Computing and Information Sciences. Dave Schmidt joined the department as an assistant professor in June, 1986.



Dave received his MS degree from KSU in 1976. A year into his PhD studies, his interests in formal aspects of programming languages led him to work with Neil Jones, who was a professor at the University of Kansas at that time. Dave completed his coursework at KU, and when Jones took a post at the University of Aarhus, Denmark, in 1979, Dave went along. He wrote his PhD thesis while working as a research assistant at the Datology Department at Aarhus. In 1982, Dave took a post as a Research Fellow in the Computer Science Department of University of Edinburgh, Scotland. He worked there for two years on automated theorem proving problems under the supervision of Robin Milner, an internationally recognized authority in that area. Dave returned to the states in 1984 and was an assistant professor at Iowa State University for two years before returning to KSU.

Dave has authored a variety of journal and conference papers on programming language theory and automated deduction. Last summer, his book "Denotational Semantics: A Methodology for Language Development" was published by Allyn and Bacon. It has received outstanding reviews by researchers and educators in the area of semantics. The success of this book and his research articles is establishing an international reputation for Dave.

When asked what his hopes for the department are, Dave replied, "I'd like to see the department achieve an international reputation in one or more research areas. We don't have to operate on the physical scale of a Carnegie-Mellon; all we need is a core of dedicated researchers who are willing to pull together and spend some extra time helping one another. I am optimistic about the future of the programming languages group at KSU; I feel we are only one or two faculty members away from achieving a 'critical mass' in that area. Of course, the budget is always a problem; it's hard for the department to gain recognition when we come up short on postage and photocopying money for mailing our technical reports! But overall, the situation is quite promising."

Dave is also an outstanding teacher, and a beneficial addition to this department. We expect great things from him in both research and education.

IBM Scholarship Funded by KSU Alumni

Future generations of computing professionals will benefit from contributions by KSU alumni within the IBM Corporation. In 1984 the IBM Scholarship Fund was initiated with contributions from IBM employees in Kansas City. Under the guidance of Gary Swanson, a KSU graduate with a BS in Journalism, this fund has grown to more than $28,000 from alumni contributions and 2-to-1 gift matching by IBM. This is enough to endow two scholarships per year for students in Computer Science and Information Systems. We have been able to leverage this money so that the College of Arts and Sciences will now match these scholarships with one more. Thanks, alumni! You are providing an essential advantage to these students.

Computer Science Library is One Year Old

The Department of Computing and Information Sciences' library celebrated its first birthday in August. The library currently receives 55 journals and newsletters, including all the ACM publications. Technical reports from 43 universities, both in the U.S. and abroad, also reside in the library, as do the MS and PhD theses of all graduates from our department. Funds to continue development of this facility must come from contributions because state funds are not available.

Alumni: Where Are They Now?

It is always interesting to find out what has happened in the lives of friends, classmates, and students after they leave their college days at Kansas State University behind. In each newsletter, we plan to feature one or more of our alumni, to bring you up-to-date on part of our "family."

Gary and Terry Anderson

Gary Anderson and his wife Terry are both Computer Science alumni of Kansas State University. Gary began his studies here in the late 1960s, getting his Bachelor of Science in December, 1972. One year later, he was awarded his MS in Computer Science. He stayed on at Kansas State University to get his PhD in Computer Science, graduating in December, 1978. While working on his doctorate, Gary taught Programming Languages, Operating Systems, and Compiler Design, and researched the development and architecture of concurrent programming languages.

Graduate school was not all work and no play for Gary, however. At the same time he was awarded his PhD, a certain co-ed by the name of Terry Book graduated with a BS in Computer Science. A few short days later, on December 22, 1978, Gary and Terry were married.

After Terry graduated, she worked for some time as a consultant in information systems. She specialized in the financial, human resources, and communications areas for clients, which included major New England banks, New England Telephone, and Bell Laboratories. Now Terry works for Raytheon Corporation as a Senior Systems Analyst in Information Services. Specifically, her job includes analysis, design, and programming of test equipment for configuration management systems.

Prior to and following his final graduation, Gary worked for Perkin-Elmer Computer Systems Division as a consulting member of the technical staff. During the last three years he held this position he also worked concurrently for Bell Labs/AT&T as a member of their technical staff. Then in August of 1984, Gary joined Sequoia Computer Systems, a firm that builds high-end, multiprocessor, fault-tolerant, Unix systems. Gary is Director of Software Development, which makes him responsible for twenty engineers and the development and release of all software. He is also a member of the technical staff, and engineer for C and Pascal compilers and software development tools. In addition, Gary designs and implements object code optimizers. The company is doing very well, with a backlog of orders for 10-12 machines.

The Andersons spend their limited free time on a small farm in rural Massachusetts. Terry has a couple horses to keep her busy, while Gary's hobby is raising dwarf rabbits.

Rick and Joyce Keck

Rick Keck graduated from Kansas State University in 1979 with a BS in Computer Science. His wife, Joyce Samuelson Keck, had graduated the year before with a Business Administration degree in Accounting.

The Kecks currently live in Overland Park, Kansas, with their three-year-old daughter and one-year-old son. Joyce is the accounting manager at Saint Joseph Health Center, and Rick works at Bendix as a Computer Control Systems Analyst.

Rick has provided support for the KSU Department of Computing and Information Sciences for the past several years. His company, like many others, provides matching gift funds for donations made to universities, and these monies can be directed to a chosen department.

Rick's commitment to education started while he was still a student at KSU. In an independent study class, Rick developed a report entitled "Kansas State Department of Education Computer Systems Assistance Office." Its purpose was to suggest how the State Department of Education could establish a position with the function of assisting schools across the state to purchase and utilize desktop computers in classrooms. Rick followed through with this proposal after graduating. He met with Department of Education staff and some politicians, including Rep. Mike Hayden, in Topeka. Realizing that the position could never exist because of lack of funds, Gary worked with the motivated staff of the Department of Education over the next three years. Out of this effort came regional workshops for teachers using computers in the classroom, and an annual meeting for teachers and administrators to share ideas and hear lectures from leaders in the field.

With this goal met, Rick then moved on to earn his MBA from Avila College in Kansas City. Joyce received her MBA from Avila two years later. Currently, Rick is serving his community as an elected member of the West Area Advisory Board which provides input to the Shawnee Mission Board of Education.

In 1981 and 1982 Rick published three articles, "Checking Randomness of Random Number Generators," "Ascending/Descending Sort," and "Sorting by Fields," in a personal computer magazine. He hopes to earn his Master's degree in Computer Science sometime in the future; however, his commitment to his family will delay this goal. His immediate plans for continued learning are to obtain a HAM radio license and learn Spanish.

Current Students--Future Alumni

Undergrad Scholarship Winners

Every academic year, two particularly outstanding students are awarded scholarships; one funded by IBM (see related story on page 4), and one by Phillips Petroleum Company. We are proud of the students awarded these scholarships, and would like to introduce this year's recipients to you.

Paula Cochran, the IBM scholarship winner, is a senior in Information Systems. She's originally from Fort Scott, Kansas, and has a brother who also attended KSU, getting a graduate degree in Computer Science. She developed an interest in computers while working at Fort Riley.

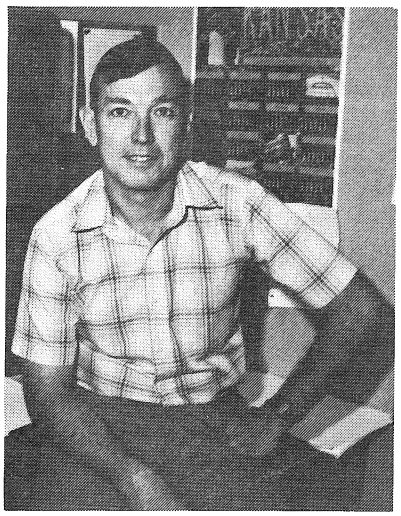
Paula is dedicated to her education, a fact that shows in her academic record. She was on the High School A Honor Roll all three years of high school, and has made the Dean's Honor Roll several times here at Kansas State University. This dedication has been honored by two other collegiate scholarships, an ESA scholarship and the William and Mary Heaton scholarship. She also holds down two part-time jobs that give her additional experience in computing, as well as helping make ends meet.

Paula is not only a student; she is also a full-time wife and mother. She has two children, aged 6 and 9. We feel that Paula deserves this scholarship, and works hard to prove it.

The winner of the Phillips Petroleum Company scholarship is Edward J. Geris, Jr. He is a senior in Computer Science. Edward hales from Leavenworth, Kansas, where he attended Pleasant Ridge High School and graduated salutatorian of his 1984 class.

Edward's love of sports and avid participation in university intramurals don't keep him from performing well in the classroom, too. While attending KSU he has been made a member of the Phi Eta Sigma Freshman Honor Society and the Golden Key National Honor Society. Edward finds it gratifying that in these times of student aid cutbacks, there are corporations that still take an active, supporting interest in education. We feel the same way!

Graduate Profile: Rayford Vaughn



Rayford Vaughn, Jr., one of our 100 graduate students, is hoping to complete his PhD program in August, 1988. He's not exactly a newcomer to the department; he received his MS degree in Computer Science from KSU in December, 1982.

After getting his undergraduate degree in Computer Science from the University of Southern Mississippi, Ray entered the U.S. Army as a second lieutenant. He was hoping to use his education in computing in the service. After serving with an airborne infantry unit in Alaska and a tour of duty in Vietnam, he got his wish with the Army's Computer Systems Command, serving as an instructor. Since that assignment in 1972, Ray has had many other opportunities to use his education in the Army, as well as teaching courses at the University of Maryland and City College of Chicago.

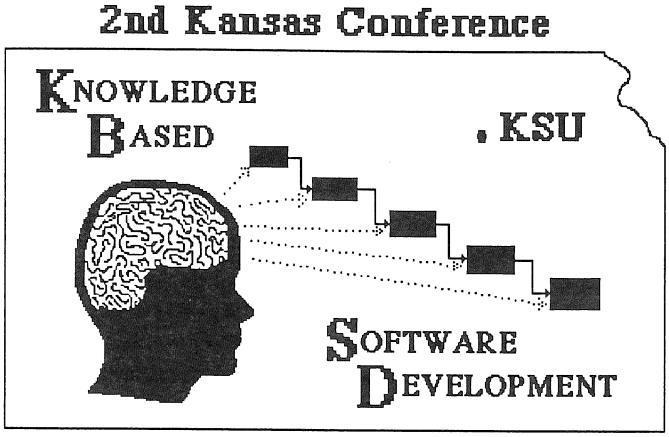
In 1981, Ray had the opportunity to work on his MS degree through a joint program established between the US Army Command and General Staff College and the Computer Science Department at KSU. While here he worked under professors Rod Bates, Beth Unger and Paul Fisher. He says, "I was extremely impressed with both the quality of instruction and the caring attitude dis-played by the faculty." That was in December, 1982, and Rayford had no expectation of returning to school. He was promoted to lieutenant colonel, returned to the U.S., and was offered the chance to obtain a PhD at the school of his choice. Because of his positive experience at KSU, Rayford applied here, and entered the PhD program in August, 1986. After its completion he will return to a posi-tion with the Army, where he hopes to influence the Army's direction in research and development, and its policy in the design of military systems, particularly small, distributed systems.

His hopes for KSU's Department of Computing and Information Sciences are "that it continues to grow in students, faculty, and equipment, but retains the atmosphere of a friendly, caring and helpful department which fosters teamwork and cooperation among its graduate students. I believe this environment sets this department apart from other, less personal, schools."

Department Visitors

Each year we invite internationally recognized scholars to the department to discuss new research developments. This past year we hosted a national conference and numerous international authorities.

In October, we hosted the Knowledge Based



Software Development Conference. The goals of the conference were to advance the state-of-the-art of expert system technology in the area of software engineering and to provide a professional development experience for both students and faculty. It was very successful. More than twenty national experts in the area gave talks and led discussions assessing the current state of the technology and its future. These were leaders from both the academic and industry arenas. The conference was sponsored by local and national industries who view this area as vital to their long-term development.

Three researchers from Denmark visited the department during the past year as well.

Hanne Riis Nielson and Flemming Nielson came to KSU in August. Both hold posts as faculty members at Aalborg University, Aalborg, Denmark. Hanne Riis Nielson has researched in the areas of attribute grammars and programming logics. Her work appears in the journals "Mathematical Systems Theory," "Science of Computer Programming," and a number of conferences. Currently, she is developing techniques for generating compilers from denotational semantics definitions. Flemming Nielson has published widely on the theory of data flow analysis, his articles appearing in the journals "Acta Informatica," "ACM Transactions on Programming Languages," "Proceedings of the ACM Symposium on Principles of Programming Languages," and a variety of conferences. He presently researches the mathematical theory of compiler generation. The two jointly hold a multi-year grant from the Danish government in support of their work. The Nielsons visited Kansas State University to present a status report on their efforts and consult with members of the department. Hanne Nielson spoke on "Code generation from two-level semantic definitions" and Flemming Nielson talked about "Flow analysis of two-level definitions."

Neil Jones, Professor of Datalogi ("Informatics") at the University of Copenhagen, presented a talk to the department in April. Jones is well known to many people in the department from his tenure as a professor at the University of Kansas from 1976 through 1979. He has written texts on computability theory and programming language principles and has edited a variety of texts and conference proceedings on topics such as compiler construction and data flow analysis. During the past three years, Jones and his research group at Copenhagen have developed a theory of "partial computation" that has particular relevance to target code improvement and compiler generation. The results have attracted world-wide interest, and Jones now holds a part-time post as a consultant to Hitachi of Japan. KSU's computing sciences department was one stop of a short tour of U.S. universities that Jones made. He spoke about the progress of the partial computation project and discussed compiling and type checking problems with several faculty.

AT&T Summer On-Campus Program

AT&T Information Systems has recognized the quality of KSU's Department of Computing and Information Sciences' graduate program in a very tangible way. Not only has the company made generous contributions in computer hardware, software and networking, it has sponsored selected AT&T employees to pursue an MS in this department each summer since 1980. AT&T's Corporate Education Center has sponsored up to seventy AT&T employees at a time to enroll in KSU's summer on-campus graduate program. These student/employees can then transfer new technology to their jobs as well as make progress toward a graduate degree. Since its inception, sixty MS degrees have been awarded in this program. These students also bring "real world" applications to the classroom. This corporate partnership between KSU and AT&T has been beneficial to all involved.

Faculty Activities

Although it seems that faculty spend most of their time working with students, they perform a wide variety of activities that promote the department, the university, the state of Kansas, and the student population. In the past five years, the faculty has produced more than 75 research and tutorial articles and books. This has contributed to state-of the-art computing in numerous areas. They have also participated in numerous professional activities. Dr. Unger was program chairperson for the 1987 national Sigsmall/PC conference. She has since been elected vice president of that organization. Dr. Gustafson and Dr. Wallentine were co-chairmen of the Knowledge Based Software Development Conference held at Kansas State University in October, 1986. Dr. Melton and Dr. Schmidt organized the Mathematical Foundations of Programming Languages conference at Tulane University. Dr. William Hankley chaired a panel at the 1987 SIGCSE conference on "Teaching Formal Specifications."

Congratulations are due to Dr. Austin Melton and Dr. David Schmidt for receiving NSF funding for their research work in Galois connections and their applications in computer science. It is important, foundational work which supports the future development of programming languages. Dr. Thomas Pittman has also received extramural funding from industry for his work in developing a transaction-oriented programming language.

Several other notes of interest include faculty on leave and new faculty. Dr. Myron Calhoun has spent the past year in Nigeria under a Fulbright teaching fellowship. In the past two years we have hired several new faculty who have strengthened both the applied and theoretical elements of the department. Dr. Pittman has been here two years. His areas of expertise are compilers and computer architecture. His hobby is small computers (especially the Macintosh), for which he is nationally known. Dr. Schmidt and Dr. Zamfir have been with us one year. Dr. Zamfir's areas of interest include artificial intelligence and theoretical models of concurrency. She has greatly strengthened and expanded our capabilities in both areas. Finally, this August Dr. Masaaki Mizuno joined us from Iowa State University. His research areas are operating systems and distributed systems. He is both talented and energetic and we welcome his arrival.

We have also lost several good faculty members. Dr. Rod Bates left us to try out private industry. He is building compilers for parallel machines. Dr. Roger Hartley has joined the faculty at New Mexico State University. He went there to join a colleague from Great Britain and work in their artificial intelligence lab. We are sad these people have left, but we wish them luck in their new ventures. They will always be our friends.

The following is a list of the current faculty and their research and instructional interests.

Myron A. Calhoun, Associate Professor. B.S., University of Kansas, 1963; M.S., Colorado State University, 1964; Ph.D., Arizona State Unversity, 1967; Researcher, Fairchild Research and Development Labs, Palo Alto, CA, 1967-1971; Asst. Prof., Elec. Engg., Kansas State University, 1971-1975; Research Fellow, U.S. Air Force Office of Scientific Research, 1984.

Major interests: Computer architecture, computer aided design, digital systems design, microcomputer applications.

Paul S. Fisher, Professor. B.S., University of Utah, 1963; M.A., University of Utah, 1964; Ph.D., Arizona State University, 1969.

Major interests: Database systems, network systems, distributed processing systems, perception pattern recognition.

David A. Gustafson, Associate Professor. B.S., University of Minnesota, 1967; B.S., University of Utah, 1969; M.S., University of Wisconsin, Madison, 1973; Ph.D., University of Wisconsin, Madison, 1979.

Major interests: Software engineering methodologies, software physics, validation techniques, AI techniques in software development, expert systems, software testing.

William J. Hankley, Professor. B.S., Northwestern University, 1962; M.S., Northwestern University, 1964; Ph.D., Ohio State University, 1967; Asst. Prof., University of Utah, 1967-1972; Computer Scientist, Programming Sciences Division, National Bureau of Standards, 1980-1981.

Major interests: Software engineering (environments, specification, verification), languages (Ada, Prolog, Modula2), graphic interaction.

Richard A. McBride, Assistant Professor. B.A., University of Colorado, 1968; M.S., Southern Illinois University, 1974; Ph.D., Kansas State University, 1980; Project Manager, NDX Corporation, Toronto, Ontario, 1980-1982.

Major interests: Computer networks, concurrent programming languages, operating systems, office information systems.

Austin C. Melton, Assistant Professor. B.A., Friends University, 1971; M.S., Kansas State University, 1974; Fulbright-Hays Fellow, Universitat Bremen, 1978-1979; Ph.D., Kansas State University, 1980; Asst. Prof., Marshall

Faculty Activities, continued

University, 1980-1982; Asst. Prof., Wichita State University, 1982-1984.

Major interests: Denotational semantics, software engineering, programming languages.

Masaaki Mizuno, Assistant Professor. B.S., Keio University, 1978; M.S., Keio University, 1980; M.S., Pennsylvania State University, 1982; Ph.D., Iowa State University, 1987.

Major interests: Operating systems, computer architecture, computer languages, computer security, distributed systems.

Thomas Pittman, Assistant Professor. B.S., University of California, Berkeley, 1966; Software Consultant, 1972-1985; M.S., University of California, Berkeley, 1980; Ph.D., University of California, Santa Cruz, 1985.

Major interests: Programming languages, compilers, VLSI computer design, expert systems.

David A. Schmidt, Assistant Professor. B.A., Fort Hays State University, 1976; M.S., Kansas State University, 1977; Ph.D. Kansas State University, 1981; Science and Engineering Research Council Research Fellow, University of Edinburgh, 1982-1983; Asst. Prof., Iowa State University, 1984-1986.

Major interests: Denotational semantics, applicating programming, natural deduction theorem proving.

Elizabeth A. Unger, Professor. B.S., Michigan State University, 1961; M.S., Michigan State University, 1963; Assoc. Dir., KSU Computing Center, 1970-1974; Ph.D., University of Kansas, 1978.

Major interests: Database systems, programming languages, computer science instruction, concurrency, office automation systems.

Maarten van Swaay, Associate Professor. Candidaat, University of Leiden, the Netherlands, 1953; Ph.D., Princeton University, 1956; Drs., University of Leiden, 1956; Senior Research Asst., University of Leiden, 1956-1959; Senior Staff, University of Eindhoven, the Netherlands, 1959-1963; Assoc. Prof., Chemistry, Kansas State University, 1969-1982.

Major interests: Computer architecture, microprocessors, instrumentation.

Virgil E. Wallentine, Professor and Head. B.S., Iowa State University, 1965; M.S., Iowa State University, 1970; Systems Analyst, Ames Lab., U.S. Atomic Energy Commission, 1967-1971; Ph.D., Iowa State University, 1972.

Major interests: Operating systems, computer networks, concurrent programming languages, knowledge engineering.

Maria Zamfir, Assistant Professor. Diplomate, University of Bucharest, Romania, 1960; Visiting Fulbright-Hays Scholar, University of California, Irvine, 1972-1973; Visiting Fulbright-Hays Scholar, University of California, Los Angeles, 1973-1974; Teaching Fellow, UCLA, 1982; Ph.D., UCLA, 1982; Computer Systems Specialist, Research & Development Dept., System Development Corp., Santa Monica, California, 1982-1984; Visiting Lecturer, UCLA, 1983-1986.

Major interests: Formal methods of concurrency, artificial intelligence, concurrent programming languages.

Keeping Track

We're interested in you! Please take a moment to fill out the information form below and return it to us.

Name _____

Street Address _____

City, State, Zip _____

Year graduated _____ Degree _____

My current company _____

My job or position _____

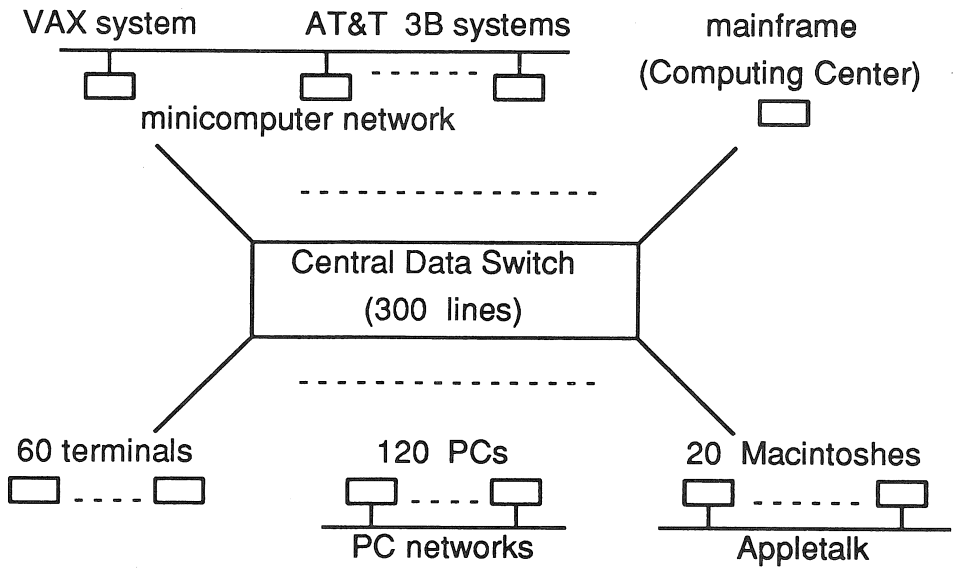
Questions for the newsletter _____

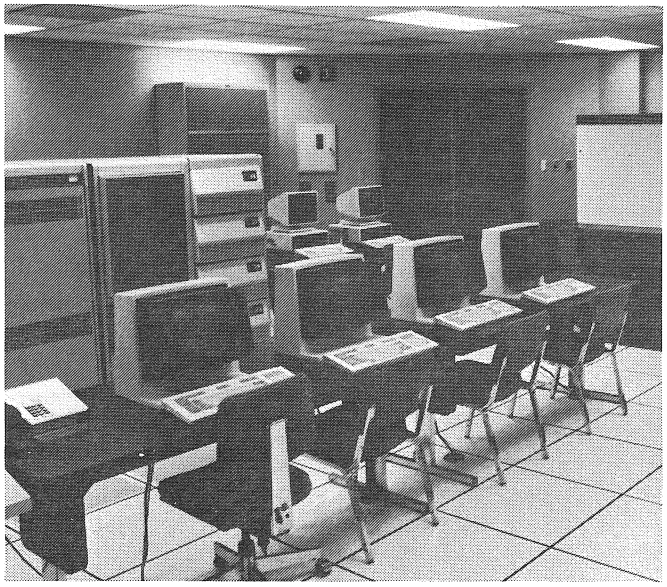
A Lab Science Coming of Age

Many of you fondly remember the hours you spent punching cards (and then dropping them) in the basement of Fairchild Hall. Replacing those lovable old machines in the Department of Computing and Information Sciences are state-of-the-art computing environments. We have achieved our goal of making interactive computing available to literally every class in the curriculum. At present, we have 20 Apple Macintosh computers, 60 AT&T Unix PCs, 60 PC-compatible systems, a VAX 11/780, 17 AT&T 3B minicomputers, several Artificial Intelligence workstations, and local area networking to completely interconnect them. In addition, there are 60 terminals connected to a data switch which allows a user to sign on to any of the above machines plus the mainframe. All of the major operating systems are available: MS/DOS, Unix, and CMS. In addition, the department has a software inventory exceeding 150 unique packages.

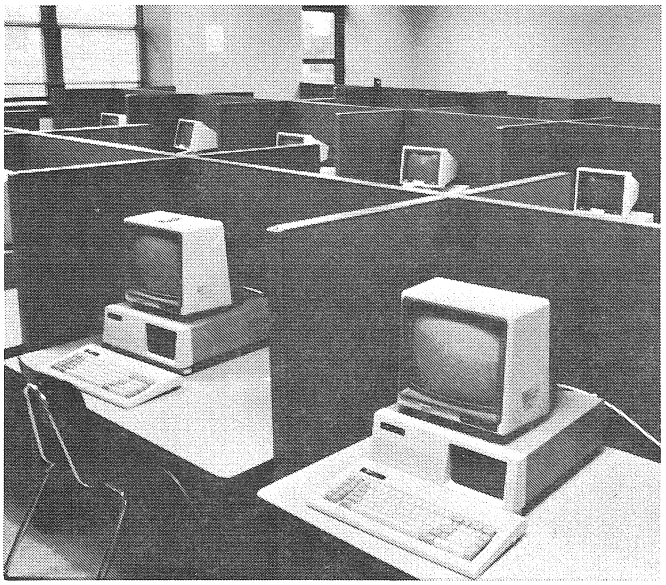
Much of this lab equipment and software ($1.7 million) was donated by private industry, principally AT&T. We feel that this generous support is in recognition of the quality of our program and the graduates it has produced. More equipment donations are expected. It is now our task to find the funds to maintain and improve the environment. At present, this computing environment rivals any found in middle western universities.

Equipment Configuration in the Department of Computing and Inform ation Sciences





Machine room, Nichols Hall



PC laboratory, Nichols Hall

The Computing and Information Sciences Development Fund

Private support of the Department of Computing and Information Sciences is the key to excellence for computing at KSU. At the present time all three major facets of the Kansas economy--agriculture, gas and oil, and the aircraft industry--are in trouble. The state of Kansas does what it can for the university by providing faculty salaries and physical facilities, but these aren't the only needs of a department. We have been successful in attracting equipment and software grants from industry ($1.35 million in the last two years) to fill our computing laboratories. Industry, however, does not always provide the funding to maintain this equipment, or support and improve faculty and student development activities. Thus, private funding becomes extremely crucial to the success of the program, the faculty and the students.

We have three categories which we think are vitally important to the advancement of this department. First, we need to continue developing our department library so that students and faculty have access to current journals and technical reports, and so we can participate in the exchange of technical reports with other major universities. Second, we must develop new sources of funds to support faculty and student development. This money will go towards invited seminar speakers for both students and faculty, small supplements for faculty research and class development materials, and support for faculty and student travel to professional meetings. The third major area in which we are currently lagging is scholarship and fellowship support. We need strength in this area in order to attract good students.

In order to meet these needs, we have established a special account in the KSU Foundation called the Computing and Information Sciences Development Fund (CIS Fund). If you would like to help us maintain a top quality program, please use the form below. Check with your employer, too. Many companies have a gift-matching program. We hope that your experience at KSU was positive, and that you'll want to support the department with your donation, large or small. We appreciate your help--thank-you!

Virgil E. Wallentine, Department Head

Yes, I want to help!

☐ I want to support the Department of Computing and Information Sciences. Enclosed is my check for $_____ made payable to the KSU Foundation but designated to the CIS Development Fund.

☐ I want to pledge my support for the Department of Computing and Information Sciences for:
☐ $1000 ☐ $500 ☐ $250 ☐ Other
to be paid in _____ installments. Enclosed is my first check for $_____. Please bill me annually for the next _____ years. I would prefer billing in the month of _____.

☐ Department library

☐ Faculty and student development

☐ Scholarships and fellowships

This gift ☐ does ☐ does not qualify for a matching gift from my employer.

Date _____ Class _____

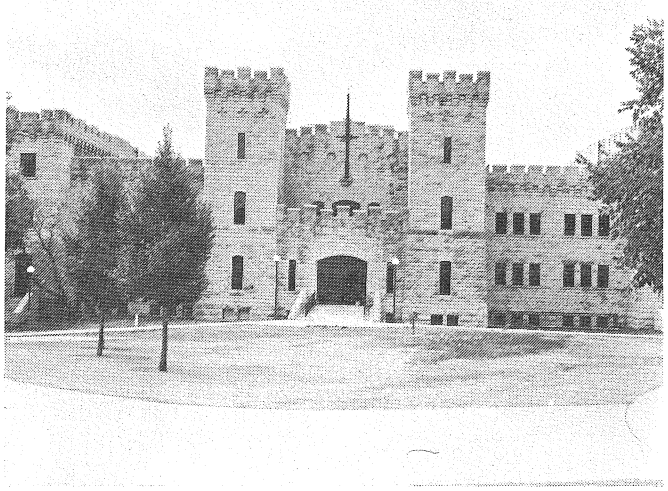
Name _____

Street _____

City, State, Zip _____

Authorized signature _____

Business or employer _____



Please return to KSU Foundation, P.O. Box 1806, Manhattan, KS 66502.