Department of
Computing & Information Sciences

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

Castle Computing

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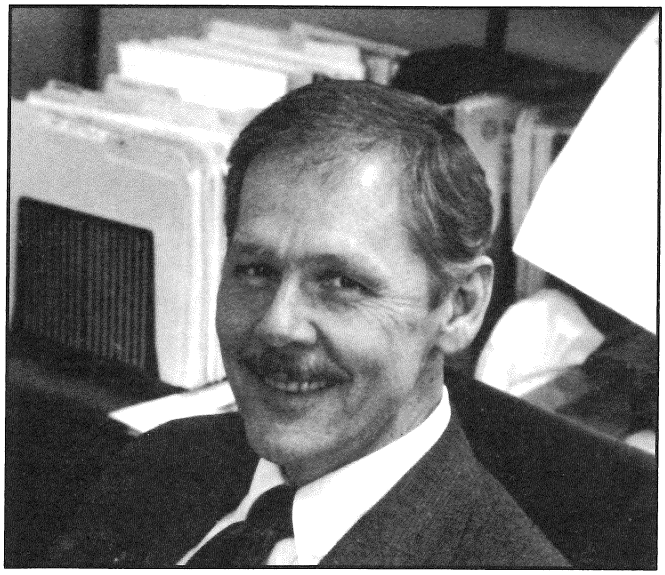
Greetings from the Department Head.

This is the fourth edition of "Castle Computing". It is our way of keeping the communication lines open to our alumni and friends. And we have provided a convenient form for you to keep us appraised of your whereabouts and activities. We really do want to hear from you.

This has been an exciting year. Several very significant events have occurred which directly affect our future. As an example, our BS in Computer Science degree program was accredited by the Computer Science Accreditation Board. Also, as of January 1, 1993, the CIS Department moved from the College of Arts and Sciences to the College of Engineering. This allows greater interaction between engineering projects and computing technology and research. Additionally, we have added a new "electronic studio" for in-class demonstrations of software. And as has been their tradition, our faculty continues to focus on both excellent teaching and a broad spectrum of research projects. Student evaluations and their published research papers and extramural grants attest to their excellence.

There are many other exciting activities documented in this newsletter; we hope you enjoy it. We have enjoyed putting it together. Please keep us advised of your whereabouts and I will very much appreciate some input on the content and format of this publication. Also, please send us information on your activities; we would like to keep other alumni informed of their classmates and fellow alumni. Finally, I want to thank each and every one of you for



your support of the Department. Without your commitment to spread the word about KSU, your contact with future students for CIS at KSU, and your material support, we could not provide a high quality educational experience for students.

IN THIS ISSUE:

Project Choice Students Now Majoring in Computer Science

Four years ago Ewing Kauffman changed the lives of many freshmen students at Westport High School in Kansas City when he promised to fund their college education, job training, or trade school preparation if they graduated with their classmates and avoided drugs and teenage parenthood.

Of the 115 Westport students who completed their high school education this past spring and met those conditions, nine graduates, including the class valedictorian, are enrolled at Kansas State University.

The top student, Xia Sun of 4108 N. Campbell, Kansas City, MO, is now majoring in computer science. She says the program gives students many opportunities that otherwise would be difficult or impossible to obtain.

"I wouldn't have been able to come to school if it weren't for Project Choice", Sun said. "I think the students who are given the chance to participate in the program should work hard and take advantage of it. Education gives you the chance to become the person you want to be."

Another Project Choice student, Mia Strange of 1729 Kansas Ave, Kansas City, MO, is also majoring in computer science.

Our congratulations and hopes for continued success go to these fine students.

Computer Science Program is Accredited

As your recall from our newsletter last year (Castle Computing Vol. 1, Number 3), the Computer Science Accreditation Commission visited CIS at KSU to review our Bachelor of Science program in Computer Science. And it came as no surprise that after intense scrutiny our program is now accredited. Now we are the only accredited BS in Computer Science in the state of Kansas and one of only two Computer Science programs in the Big 8 which are accredited. This documents the high quality of our program and recognizes the value of a Computer Science degree from Kansas State University. For many years, students, faculty, and industry have shown confidence in our program, but now we have documented proof. The visitation team that reviewed the BS/CS program studied the qualifications of our faculty, the content of our courses and curriculum, our computing facilities, and general administrative support for the BS/CS. In their final report, they said "The program leading to the B.S. in Computer Science at Kansas State University has good students and a dedicated faculty." We appreciate the high praise for both students and faculty and rededicate ourselves to excellence in our teaching programs.

CIS Installs Electronic Studio

For many years teachers in the computing sciences lectured in the classroom and left the students to their own devices in developing programs and systems in a computer lab. Today, we realize that interactive sessions with the computing facilities in a laboratory with an instructor present to guide students through tough spots is good learning practice. Gone are the "IBM cards"; in their place are interactive workstations. Present day technology is a collection of X-terminals attached to a Unix server. Thus, CIS has installed 17 X-terminals attached to two Sun Sparc 2 Unix systems in an electronic studio where faculty can demonstrate operating programs in a class/lab environment. Whatever the faculty puts on his/her terminal, the students can see on their terminals. This interactive display gives students the "look and feel" of a specific system under both valid and invalid user control. When they go into the lab by themselves, they are better able to diagnose poor program behavior as well as be more productive with Computer Aided Software Engineering (CASE) packages.

CIS Moves to Engineering

As of January 1, 1993, the Department of Computing and Information Sciences became part of the College of Engineering. After more than two decades of growth and development within the College of Arts and Sciences, the faculty of CIS voted unanimously to move the Department. After several meetings that occurred over five months, a panel of faculty and administrators (consisting of the Provost, the Deans of Engineering and Arts and Sciences, faculty representing the CCOPs of the two colleges, a faculty member representing Faculty Senate, and the heads of departments of CIS and EECE) voted unanimously to support the move.

The BS in Computer Science, the BS in Information Systems, the MS in Computer Science, and the PhD in Computer Science will move intact to the College of Engineering. The BA degrees in Computer Science and in Information Systems will remain in the College of Arts and Sciences, while the CIS courses will still be taught by the CIS Department faculty. Students currently in the program can elect to get their degree in either Engineering or Arts and Sciences. However, all new students will have a degree conferred from the College of Engineering only.

The move was precipitated by the realization that stronger ties were needed between the CIS Department and Engineering Departments to accomplish the following goals. First, the undergraduate curriculum in Computer Science is now accredited and the "problem-solving" nature of undergraduate Engineering education provides a truly essential industry-oriented training for these students. Second, software methodology is becoming an integral part of many engineering products. Third, nationally, computer scientists are being asked to reach out to other disciplines to help solve their computing research and integration problems. This is an "engineering culture".

We leave the College of Arts and Sciences with mixed feelings. It is a great college with many fine departments and excellent faculty. We owe both the College and the Department of Statistics a tremendous debt of gratitude for giving us an environment in which to mature.

Our address will stay the same and we will remain in Nichols Hall. It is only an administrative change, but one that will bring real benefits to our students.

Expanding Our Classroom to a Nation-Wide Audience

Kansas State University is a quality institution on the great plains. In the past that meant our audience consisted of strictly on-campus full-time students. But there are many professionals already in business and industry who need to upgrade their technical computing and software skills. Thus, we conduct a Summer On Campus program which brings computing professionals to campus for five weeks each summer, from 32 AT&T sites across the country. Additionally, we have become a member of the National Technological University (NTU), a consortium of high quality universities which provide graduate level technology courses to 75 major corporations across the USA. The courses are offered on-campus to regular graduate students and then videotaped in an electronic classroom. These tapes are then transmitted via satellite to corporate members of NTU. Communication with the on-campus instructor is via phone, facsimile, and electronic mail. Our first course was a graduate level Data- and Knowledge-based Systems course taught by Dr. Elizabeth Unger. This year we will offer graduate courses in Programming Science, Expert Systems, Data and Knowledge-based Systems, and Software Measurement. If you are interested in upgrading your technical skills, pursuing an MS in Computer Science degree, or wanting to stay abreast of the rapidly changing technology, please give us a call. We can give you information on enrollment procedures.

A Short History of Computing at KSU

Computing essentially started at KSU in 1958 with the installation of an IBM mainframe. The main focus of computing at that time was on programming. Even then there was a debate about where the machine belonged, in Mathematics or in Engineering. In the 1960s, the discipline of Computer Science evolved and central administration realized that this discipline could not be contained in Mathematics. Thus, in 1968, Dr. Bevan, then Vice President for Academic Affairs decided that Computer Science would develop in the College of Arts and Sciences. He also gave the responsibility to develop the Computer Science discipline to the newly formed Department of Statistics because this department had separated from Mathematics and had experienced "growing pains" that were expected in Computer Science as it matured. In 1971, the Computer Science Department was formed as a separate unit in the College of Arts and Sciences. Dr. Harold Sackman from the Rand Corporation, was named the first department head. At that time, baccalaureate degrees and a M.S. degree were transferred to the new department. In 1971, the Computer Science departments at KSU and KU each proposed to start a PhD program in Computer Science. The Board of Regents decreed there would be a joint program. In 1972 Dr. Paul Fisher became the new Department Head. At this time most computing for Computer Science majors was on the mainframe IBM computer, but in the 1970s with the advent of the mini-computer, the Computer Science Department moved more of its computing to this new technology base.

In 1980, the faculty realized the need for a technical computing degree with heavy emphasis on business practices and instituted both a BS and a BA in Information Systems. In 1982, Dr. Virgil Wallentine became Department Head. Through the early part of the 1980s, the enrollment in Computer Science at the undergraduate level quadrupled, from about 150 majors to 600 majors. In 1985, the Department moved from Fairchild Hall to the newly renovated Nichols Hall, our "high-tech" Castle on the Plains (hence the newsletter - "Castle Computing"). In 1986 the Department changed its name to the Department of Computing and Information Sciences to reflect the emphasis on information systems as a central part of the computing discipline. During this same time-period, personal computers with the DOS operating systems and mini-computers with the Unix operating system became the principal computing platforms for CS and IS students.

Now we are in the 90s and our mission is changing. We continue to offer introductory "computing literacy" courses for the whole university, offer solid undergraduate degree programs in Computer Science and Information Systems, offer advanced degrees (MS and PhD) in Computer Science, and conduct research in fundamental areas of computing (programming languages, data and knowledge systems, software engineering, and distributed systems). While Computer Science faculty across the country previously pursued research only in core computing sciences - languages, systems, data bases, software engineering, etc., now our mission is to reach out and solve computing research problems in other disciplines. Additionally, we feel that stronger "outreach" programs are essential. Thus, our Summer On Campus programs are solid and we are part of National Technology University, teaching graduate courses which are beamed through a satellite to companies across the country. Finally, we think it important to expand our degree offerings to include a Master of Software Engineering. It is consistent with our new home in the College of Engineering and valuable to professional engineers and computer scientists in industry who need to be experts in software construction and maintenance.

Nichols Nugget: Why A Castle?

Nichol Hall (originally Nichols Gym) was first constructed as a military drill hall. Having Military Science was a requirement for a land-grant university. Thus the "castle-like" appearance of the building. This is fairly common construction at other land-grant schools as well.

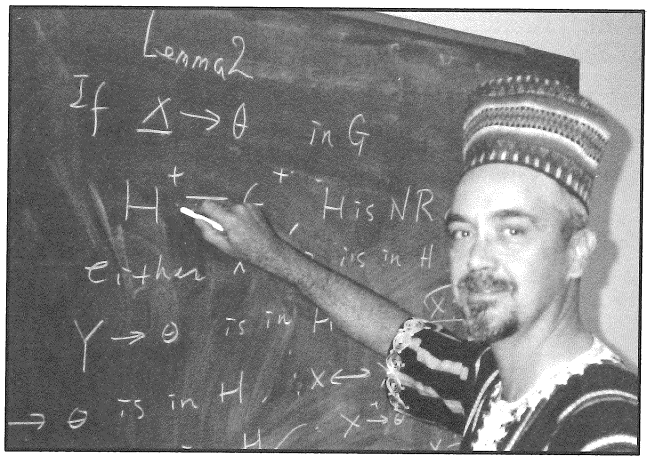
Faculty Profile: Dr. Myron Calhoun

Myron was born in Michigan 'way back in 1941, but received his elementary and secondary education in the Florida public school system, graduating as a National Merit Scholar and Valedictorian of his senior class. In 1959 he entered Graceland College (Iowa), graduating two years later with 78 semester hours, an Associate of Arts degree, and a Gold Seal for scholarship. That fall he entered the University of Kansas (known respectively in Lawrence as "Harvard on the Kaw" and not quite so respectfully in Manhattan as "that mental institution down the river") and, with financial assistance from both Boeing and RCA scholarships, graduated two years later "with highest distinction" and a Bachelor of Science degree in Electrical Engineering. During the summer of 1963, he worked as a Member of the Technical Staff at the Bell Telephone Holmdel Laboratories.

Returning to school that fall with a National Science Foundation Graduate Fellowship, he graduated in 1964 with a Master of Science degree in Electrical Engineering from Colorado State University and, with a National Aeronautics and Space Administration Traineeship, in 1967 with a Doctor of Philosophy from Arizona State University. In his spare time during the summer of 1966 he worked as an Engineer doing undescribable classified things on behalf of the Atomic Energy Commission at the Jackass Flats test site near Las Vegas!

About halfway through his schooling he married his Graceland College sweetheart, Nancy, and they reared a family which eventually included a daughter, Edith (who is now an elementary school teacher in the Kansas City area), a son, Omner (who studied Computer Science/Engineering and now works for the Harris computer Company in Melbourne, Florida), and a second son, Aaron (who thought life was more fun than school but is now an Emergency Medical Technician for an ambulance company on the Pine Ridge Indian reservation in South Dakota). Although she had received her B.S. in Math before they were married, after their children "left the nest", Nancy returned to school and earned another B.S. and then an M.S. degree, both in the CIS Department here at KSU.

After finishing school, Myron went to work at



a Research and Development laboratory in California where he helped design and build a computer in which the editor, compiler, and multi-processing/multi-programming operating system were all implemented in hardware-no software need apply! But every year, one of his former classmates who had come to KSU called to ask "When are you going to leave that rat race and come back to the ivy-covered halls of academia?" Finally, Myron succumbed to the inevitable and came to KSU in 1971 (the same year CIS was carved out of the Statistics Department) as a part-time member of both the Electrical Engineering and CIS Departments. Later he converted to full-time CIS, and he's been here ever since ("One of the fixtures", as he put it!) except for the year he taught as a Fulbright scholar in Nigeria, Africa. (But therein lies another whole story by itself which will just have to wait—he was "detained" by the Nigerian authorities "on suspicion of spying"!)

Myron's hobbies include farming, shooting (and reloading to keep the cost down), amateur radio (his call is W0PBV), and emergency preparedness (he is the volunteer Emergency Radio Officer for Riley County). He is currently working to get an amateur radio station operating at the Manhattan Middle School (equipment donations will be greatly accepted). Instead of teaching during the summer ("It's too fast and furious to be any fun!"), Myron likes to get back out into the "real world": in recent summers he has worked at Eglin Air Force Base in Florida; at a computer "think tank" in Texas; and at the Argonne National Laboratory in Illinois. He also does a small amount of consulting, includ-

Myron Calhoun (continued)

ing several stints for attorneys trying to break some crucial computer patents.

Although he dabbled at research awhile after coming to KSU, Myron's real love is teaching in general, and teaching undergraduate students in particular; over the years he has taught some two-thirds of the courses required for the CIS degree. His teaching style includes lots of "real world" examples, and his classroom philosophy of "do it right the first time or else do it again" once caused a student to tell a Dean, who relayed the comment (but not the student's name!) to the whole CIS Department "Dr. Calhoun is a son of a bitch, but he's good and he's fair." Myron's response was that he could live with the first part of the comment as long as the last part was included. In 1990, Myron was given the Stamey Teaching award.

Myron likes to hear from former students, especially those who are now working in industry. Please feel free to contact him via the INTERNET at mac@cis.ksu.edu or by regular letter or telephone, and if you are ever "slumming" in Manhattan, please drop by Nichols 324-B to visit for a few minutes.

The Changing CIS Curriculum

The undergraduate requirements have changed almost yearly since 1979. In 1980-1981 the Information Systems major was introduced, with Kansas State one of the first schools to have such a major within a computer science department. Starting in Fall 1990, the department changed its name from Computer Science to Computing and Information Sciences, and the course designation changed from CMPSC to CIS. Starting this Spring, the majors' designators were changed from CMPSC to CS and INSYS to IS.

Many of the courses have had number changes, with just a few remaining stable. CIS 200, 300, 362 and 580 have kept the same numbers since they were first introduced. The courses which have changed are:

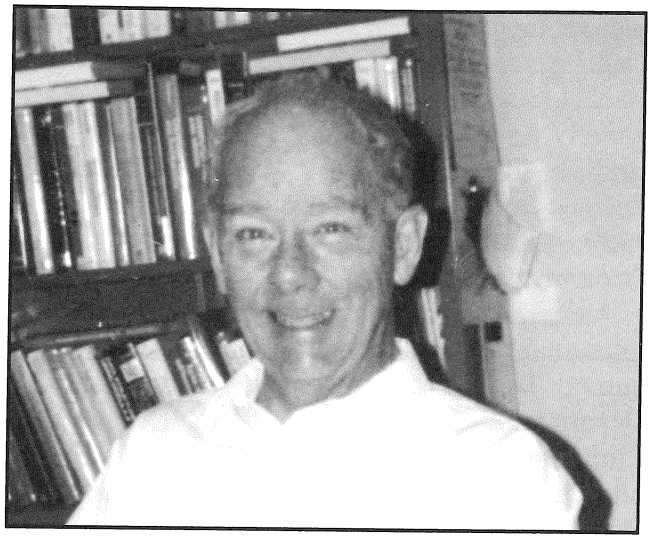
CIS 207 -> 203 Pascal Language Lab
CIS 305 -> 350 Assembly Language
CIS 340/341 -> 540/541 Software Engineering
CIS 370 -> 570 Theoretical Foundations
CIS 405 -> 505 -> 605 Programming Languages
CIS 420 -> 520 Operating Systems
CIS 560 -> 460 -> 500 Data Structures
CIS 505 -> 307 -> 407 Assembly Language
CIS 561 -> 560 Database
CIS 662 -> 562 -> Advanced COBOL (now deleted)
CIS 765 -> 567 -> Systems Analysis (now deleted)
CIS 462 Information Systems (new in Fall 1992)

For the most part, the changes made over the years could be considered "fine-tuning". But we have added courses which we believe will better prepare our graduates. These include CIS 301 Logical Foundations, CIS 492 Computing Ethics, CIS 525 Telecommunications, MATH 510 Discrete Mathematics, ENGL 516 Written Communications for the Sciences, and STAT 410 Probabilistic Systems Modeling. And starting in Fall 1992, students must attain a 'C' or better in all courses required by the department.

The technical electives have changed from a very general grouping of 15 hours to specific requirements for CS and IS. The CS students now must complete an additional nine hours of CIS courses at the 500 level or greater. The IS students take 12 hours from a group of courses designed to support possible future work in one of five career areas.

The Natural Science Electives have become stricter for the CS majors because of the guidelines of our accrediting agency. Those students will be required to take science courses which would be required for a student majoring in a particular science curriculum.

Faculty Profile: Maarten van Swaay



Maarten van Swaay joined the department sometime in 1981, gradually, first by walking over from his office in the Chemistry department to help teach the proverbial 'KIM' course, and then by formally moving from Chemistry to a series of makeshift offices in Fairchild Hall. Those were the days when the field of computer science was still new enough to lead to staffing by people who grew up before formal education in computer science had become available. Maarten did not come in 'through the back door', however; as the instrumentation expert in chemistry he had been responsible for bringing the first four computers into that department, for designing and constructing many interfaces for major instruments in the chemistry department, and for developing graduate courses in instrumentation and computer interfacing.

Further back in time Maarten received his undergraduate education in physical chemistry at the University of Leyden in the Netherlands, his native country. By now, he has spent a little more than half of his life in the U.S.A., three of those as a graduate student at Princeton University, and the remaining years in Manhattan, KS.

The switch from chemistry to computer science has not been the only major switch in interest: since 1985 Maarten has become increasingly involved with social and ethical aspects. That interest started in the early days of computer viruses, when even the word virus by itself was seen by many as good reason for suspicion. At that time any admission of curiosity about the anatomy of a computer virus might well be treated as heresy, especially in a department of computer science. Nevertheless Maarten remembers broadcasting a question within the department whether it would be appropriate to broach the subject of viruses. Not surprisingly, no answers came back ...

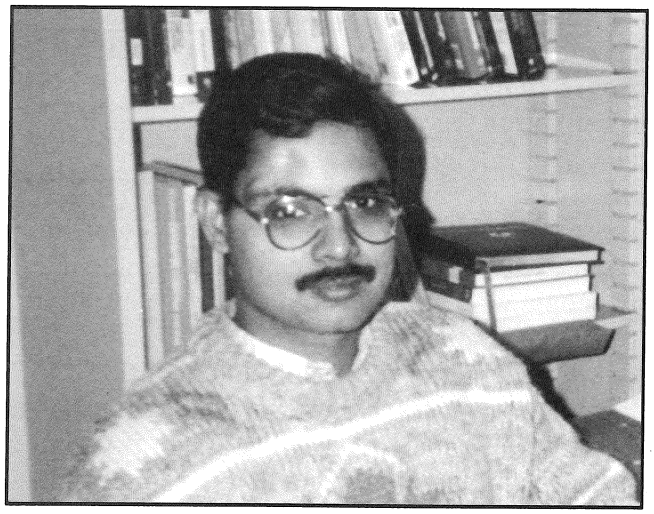
From the work of Fred Cohen it became quite obvious that viruses not only exist; Cohen also demonstrated that viruses are conceptually simple enough for even a first-year student to understand, and he argued persuasively that there cannot be a generic defense against viruses. Thus computer scientists were confronted by a dilemma: should viruses be discussed in the classroom in an attempt to develop a line of resistance against them, or should discussion be suppressed in an attempt to limit the spread of potentially dangerous knowledge? Fortunately academic sanity prevailed, and the computer world developed a context in which viruses and other controversial topics can be properly discussed.

After this early exposure to modern dilemmas in the computer world Maarten has actively pursued such ethical issues, and now has a national reputation as speaker on such topics as the essential need for trust even in secure computer systems. He has introduced a computer ethics course into the curriculum; last summer that course became a required component for the bachelor's degree in computer science at KSU. With his contacts he was fortunate to entice Cliff Stoll of hacker-stalking fame to the campus in the spring of 1991 for a seminar that kept a large audience enthralled well beyond the customary one-hour presentation.

Maarten's ambitions for the department are simple in concept, but extensive in scope: he hopes to shape our curriculum in such a way that our students will be encouraged to become valuable people rather than clever "technonerds". In Maarten's view, computers are exciting only to the extent to which they touch people. Thus he believes that computer science courses should not only deal with the developing technology, but should also be salted with a liberal sprinkling of its human and social consequences.

Faculty Profile: Gurdip Singh

Gurdip joined the Computer Science Department at the Indian Institute of Technology, New Delhi when it started in 1982 and earned a Bachelor of Technology degree in 1986. Subsequently, he came to the United States for further studies and earned an MS and PhD in Computer Science from SUNY at Stony Brook, NY in 1989 and 1991 respectively. He joined this Department in 1991.



Gurdip has been teaching courses and doing research in various aspects of distributed computing. The first course taught by him in this Department was on Concurrent and Distributed Computing in Fall 1991. In Spring 1992, he introduced a new course on Formal Methods in Distributed Computing in which he taught verification techniques for distributed programs. He would like to write a book based on the courses he is teaching at K-State. He is interested in developing algorithms for distributed system management. He is also interested in compositional methods for development of distributed algorithms. His aim is to develop distributed programming languages which enable large programs to be developed correctly and easily. He has published in several conferences and journals.

He says that the Department has a broad research focus with several well-defined concentrations and is growing steadily. He would like the Department to hire more faculty. He likes to work closely with students on research problems and hopes that the Department will also be able to increase the number of PhD students.

Gurdip and his wife, Harleen (who is also studying at Kansas State), both like this place and enjoy living in Manhattan.

Thanks to Summer On Campus Students

CIS at KSU offers a Summer On Campus program for employees of AT&T who wish to pursue an MS in Computer Science. We have been running this program for 13 summers. It is a program where both students and faculty learn from one another. Typically, 60 students are enrolled each summer and we have produced more than 100 graduates with an M.S. in Computer Science from this program. It has become somewhat of a tradition for the students in the program to contribute their own resources to the Department. This year was no different. Over the past five years, these AT&T student-employees have contributed more than $7,200 to the Department. These funds are used to buy terminals, network connections, software, etc. to be used by both Summer On Campus students and by students on-campus the remainder of the year. We salute the AT&T Summer On Campus students for their commitment to quality education and their generosity to KSU students and faculty. Thank you.

Nichols Nugget: More History

The original structure was called Nichols Gymnasium, named after Ernest R. Nichols, president of Kansas State Agricultural College from 1899 to 1909. The building was gutted by fire on Friday, December 13, 1968. The actual renovation of Nichols began in 1983 after years of conflict concerning its future. The cost of rebuilding the structure was $5.58 million, or almost 56 times the cost of the original structure. The rededication was on Parent's Day, Friday, November 15, 1985.

Seminar Presentations in the Department

The Department Seminars continue to be a strong component of the educational opportunities. The past three semesters have been especially informative and varied. If any alumnus would like to give a seminar presentation, please contact Dr. Wallentine.

September 24: Dr. Gary Leaven, Iowa State University, "Reasoning about Object-Oriented Programs that use Subtypes".
October 1: Dr. Horst Zuse, Technische Universit' of Berlin, Germany, "Measurement Theory and Software Metrics".
October 15: Dr. Jan Chomicki, Kansas State University, "History-less Checking of Dynamic Integrity Constraints".
November 15: Dr. Julia Lawall, Indiana University, "Back to Direct Style II: Adding first class continuations".
November 19: Dr. K. Ravindran, Kansas State University, "Casual Broadcasting and Its Applications in Distributed Systems".
November 21: Dr. Deryck Brown, University of Glasgow, Scotland, "Compiler Generation System 'Actress'".
December 3: Dr. Mitchell Neilsen, Kansas State University, "Quorum Structures in Distributed Systems".
January 30: Dr. Arthur Ramer, "Information Based Reasoning in Fuzzy and Dempster-Shafer Theories".
March 4: Mr. David MacQueen, AT&T, "The Programming Language Standard ML".
March 20: Dr. F. Kenneth Zadek, Brown University, "Optimization of Compilers".
March 23: Dr. Feliks Kluzniak, Warsaw University and University of California/Riverside, "Towards Practical Executable Specifications in Logic".
April 24: Dr. Amr El Abbadi, University of California, Santa Barbara, "Order Sharing: A New Lock Primitive for Database Systems".
April 28: Dr. Ouri Wolfson, University of Illinois, "Active Databases for Network Management".
May 4: Dr. Jens Palsberg, University of Aarus, "Safety Analysis Versus Type Inference".
May 14: Dr. Pramod Chandra Bhatt, Indian Institute of Technology, "Black-board Systems".
June 22: Dr. Wlodek Drabent, University of California-Riverside/Polish Academy of Sciences/Linkoping University, "What is Failure? Or: Constructive Negation by Fail Answers".
September 2: Mr. Steve Hagen, NCR Peripheral Products Division, "Disk Array Controller Software Development: Process Improvements with Supporting Metrics".
September 8: Dr. Allen Stoughton, University of Sussex, "Definability of Functions in the Programming Language PCF".
September 10: Dr. Damian Niwinski, University of Warsaw, "An Alternation Hierarchy in the Mu-calculus".
October 9: Dr. Xiaoiei Qian, Computer Science Laboratory-SRI International, "Integrity Maintenance in Object-Oriented Databases".
October 9: Dr. Pierre Cregut, Lients and AT&T, "Higher Order Functors in SML: Use and Implementation".
October 26: Dr. Jean-Francois Perrot's, Universite de Paris 6, "Objects and Production Rules".
October 27: Dr. Ken Shultis, Kansas State University, "Computational Diversions in Nuclear Engineering".
November 4: Dr. K. Ravindran, Kansas State University, "Distributed Shared Memory Mechanisms for Distributed Applications".

Faculty Farewells

Dr. Austin Melton accepted the Computer Science Department Head position at Michigan Technological University, Houghton, effective September 1992.

Dr. Olivier Danvy has accepted a research position at Carnegie Mellon University, effective January 1993.

Staff Profile: Sandy Randel

Sandy began working for the Department in 1987 as a Keyboard Operator. In 1989, she was promoted to Office Specialist and Head Secretary. She currently manages the office staff of the department.

Sandy is formerly of Winfield, Kansas. She received an AAS degree from Cowley County Community College in 1984. She is currently seeking a BA degree in Business from Kansas State on a part-time basis.

Sandy is married to Clay Randel, also formerly of Winfield. She and her husband relocated to Manhattan in 1987 because of his desire to obtain a college degree. He received a BS in Biology from Kansas State in 1992.

This past year has been an extremely busy one for Sandy. In addition to all of her regular duties, she also serves the department in the capacity of the AT&T Summer On Campus coordinator and the National Technology University (NTU) administrative contact. She also supervised the collection and categorizing of data for our accreditation, and has had to solve the many administrative problems involved with our move to Engineering.

Sandy has been an extremely dedicated, hard working staff member for the department. She was nominated by the department faculty for

Kansas State Employee of the Year in 1992. She was named as one of three finalists by the Kansas State Classified Senate. Sandy has been nominated again in 1993 for the same honor. This time the nomination came from the staff who work for Sandy in the office. That is certainly a testimony to her supervisory skills. We have just heard that Sandy is one of the three finalists again this year.

Sandy's future hopes for the department include expansion of the AT&T Summer On Campus and NTU programs.

Undergraduate Scholarship News

This has been another successful year for awarding undergraduate scholarships. We want to acknowledge the continued excellent support from our various friends in industry.

General Scholarship Winners

We hope these funds will increase next year because of our move to the College of Engineering. This should be possible through our increased involvement in the Telefund. We will have about 35 students taking part in that effort this year, about 25 more than we have ever had.

Freshmen:
Heather Theis, Overland Park, KS: Dean's Scholarship. Heather is an advanced placement student who continues to do very well in the program.

Sophomore:
Sharon Davern, Manhattan, KS: Dean's Scholarship. Sharon is a so-called "Older Student", which is defined as a student 25 or older and entering school for the first time, or returning to school.

Senior:
Eric Runquist, Great Bend, KS Dean's Scholarship. Eric graduated in December and has accepted a position with the Soil Conservation

Conoco Scholarship Winners

This is the third year we have been able to award scholarhips from funds received from Conoco. We want to thank Tom Tucker and all his fine people in Ponca City for their help in attracting and retaining quality students.

Sophomore:
Michael Svoboda, Lincolnville, KS. Michael has been on the Dean's Honor Roll since arriving at K-State.

Junior:
Matthew I. Jones, Wichita, KS. Matthew attended Pittsburg State and Wichita State before transferring to K-State.
Christopher K. Luedders, Bremen, KS. Chris is a dual major in Computer Science and Mechanical Engineering, maintaining a 4.0 GPA.

Senior:
Derek Stutzman, Manhattan, KS. Derek attended Hutchinson Community College and Hesston College before tranferring to K-State. He will graduate this summer.

IBM Employees Scholarship Fund

This is our endowed scholarship fund and provides a substantial scholarship to two outstanding students each year. We are extremely proud and grateful that the IBM employees show their concern for our program by donating to this fund.

Seniors:
Teresa L. Detter, Concordia, KS. Teresa will graduate in Spring 1993 with a dual degree in Mathematics and Computer Science.
Greg Haynes, Colorado Springs, CO. Greg will graduate in Spring 1993 and is considering returning for graduate studies.

Mutual of Omaha

After several years of close cooperation with Mutual of Omaha's recruiting efforts, the company wanted us to have the means to continue attracting the "best and brightest". Our sincere thanks to Mutual of Omaha .

Sophomore:
Joanna Reading, Humboldt, KS. Besides an excellent student, Joanna was one of the team captains for Telefund this year.

Phillips Petroleum

Phillips provides this scholarhip to help underrepresented populations continue their education at a university.

Sophomore:
Nichole Lark, Kansas City, KS. Nichole was also awarded this scholarship in her first year.

Nichols Nugget: Fire Aftermath

Nichols was not the only building which burned in 1968, the old auditorium was also destroyed. When those buildings burned, the lack of sufficient fire mains became evident. Whether or not Nichols could have been saved with more water pressure will never be known. But in the two years following the fire, most of the fire mains on campus were replaced and enlarged.

Alumni: Where Are They Now?

We always enjoy having our alums drop in for a visit, recruiting trip, lecture, or any reason to visit the old stomping grounds. Let us hear from you!

Bob and Kathy Buser

Bob Buser graduated from Kansas State University in 1972 with a BA in Political Science. Over the next four years Bob worked in the insurance industry in Manhattan, Kansas. During this time he met his wife, Kathy, who was managing a Sirloin of America franchise. Bob returned to Kansas State in 1976 to pursue his MS in Computer Science.

Upon graduation in December of 1977, Bob and Kathy both accepted jobs with Southwestern Bell telephone and moved to Kansas City. Bob's first job at SWBT was developing training programs for management and non-management employees in the Kansas City Data Center. He later took on additional responsibilities as the data center support for systems software and hardware. In 1982, Bob was moved to St. Louis, the corporate headquarters, where he managed the procurement of computer hardware for the Corporate Data Center.

In 1986, Bob was promoted to Systems Manager in the Disbursement District in Information Services. In this capacity, he had responsibilities for managing a group which developed and maintained systems to handle accounts payable, fixed asset taxes, and cost distribution of Information Services expense.

In 1987, Bob completed his MBA at Washington University in St. Louis. Currently, he is managing a group in the Marketing Information Decision Support District supporting applications that assist product managers in targeting prospective customers and tracking the results of various sales campaigns. His group also provides information to forecasters to assist in the planning of central office upgrades. On recent projects, his group has concentrated on moving the access to information directly to the client using client/server architecture and GUI tools such as EXCEL and Visual BASIC.

However, the part of his job which he likes the best is his role as Southwestern Bell Corporation's Ambassador to Kansas State. You will find him at Career Fairs, the annual KSU Open House, or just visiting with students and faculty.

Jeanie Gay

It sure is pleasant when one of your own makes good. Jeanie is not only "one of our own" because she graduated with a BS in Information Systems in 1986 and went on to earn an MS in Computer Science in 1987. Not only did she do an excellent job in the classroom, she also supported herself and her family by working long hours for the department - in the front office, in the departmental laboratories, and as an instructor in our classrooms. Thus, she is truly one of the CIS Department family.

Presently, Jeanie is with Black and Veatch Engineers in Kansas City. Jeanie is Project Manager in the Professional Services Department in the Power Division. The Power Division is responsible for designing and developing power plants. Jeanie's group, the Information Management Section (IMS) develops tools for the engineers to use during the design and development process. POWERTRAK, an innovative project management system which consists of several integrated applications areas, is one example.

Jeanie's first assignment was to direct a feasibility study for the alternative data base solutions for Black and Veatch. This study involved the comparison of several relational data base products including Oracle, Ingres, RdB, Share-

Alumni: Where Are They Now? (continued)

Jeanie Gay

Base, and Sybase. She was also involved in the data base design and enhancement with projects related to 3 Dimensional Modeling and Knowledge Based Systems.

System feasibility, design, implementation, and installation experience include a project management system, a transmission and distribution system, a power plant estimating system, plant cost, scheduling, and siting system, and a plant life extension system.

Currently, in her position as a Project Manager, she is responsible for the design and implementation of a call level interface to disparate distributed data base engines.

New Career Planning and Placement Representative

When the Department moved to Engineering we lost the services of our fine Career Planning representative, Tracey Fraser. Tracey's responsibilities do not include students in Engineering. However, we are now ablely represented by Marcia Schuley, so if any of our alums want to contact the Career Planning and Placement office about employment or possible hiring of our students, please ask for Marcia.

Marcia is a three time graduate of Kansas State University. She graduated in 1961 with a BA in English, 1976 with an MS in Guidance & Counseling, and 1980 with a PhD in Counseling & Student Personnel from the College of Education.

Marcia has been in her present position of Assistant Director of Career Planning and Placement since September 1990. She is the liaison to the Colleges of Engineering, Architecture & Design, and Business Administration.

From 1983 to 1990 Marcia was Director of the Older Kansans Employment Program with the North Central Flint Hills Area Agency on Aging in Manhattan. She also worked with offices in Emporia, Junction City, and Salina. Earlier positions included Specialist: Consultation - Education at Pawnee Mental Health, Manhattan, and Career Counselor, Project Coordinator, and Advisor in Non-Traditional Study here at Kansas State.

Marcia is a lifetime resident of Kansas and has resided in Cawker City, Salina, and Junction City. We are looking forward to working with Marcia.

'X' Arrives at CIS

No, it's not the latest movie, not some X-rated software, and not brand X.

This 'X' means the arrival of a substantial number of X Window terminals for use by our undergraduates. Now all the laboratories in Nichols have a number of these versitile and up-to-date terminals. The reaction of the undergrads has been predictable - happy to have them and how come so long to get here? As always, the big problem is money. But for now, we are pleased to have the machines available to undergraduates, and we will continue to try to obtain more.

Graduate Student Profile: Mary Sincovec

Mary received her undergraduate degree from the University of Washington, Seattle, in August 1988 with a major in Mathematical Sciences and an emphasis in Computer Science.
While attending that school, she was a student engineer with Boeing in Summer 1987. She set up an automated library reference system for the Ada engineering group. After graduation she was a software engineer for Boeing where some of her tasks were writing software procedures, testing software, tracking problems, conducting tests, and helping to correct software errors. She is currently on educational leave from Boeing Military Airplane Company.

This past summer Mary worked for the Department of Energy in Germantown, Maryland as an Operations Research Analyst. She updated the Fossil Energy Inventory Database and worked with her supervisor on some other small projects.

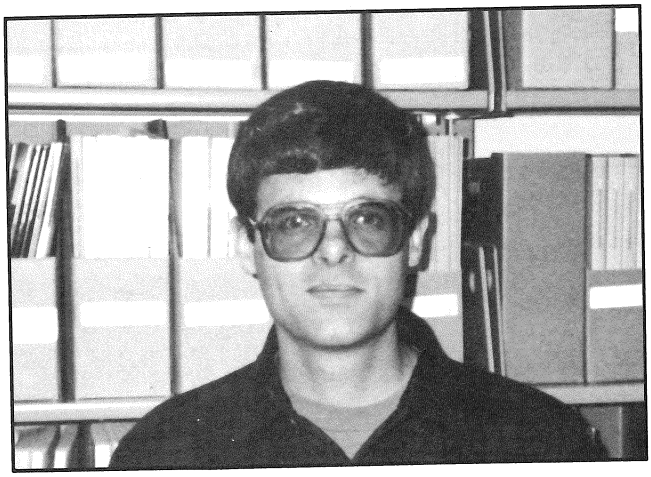
Mary is working with Dr. Unger in the area of database systems, but also has an interest in database security. Mary expects to finish her MS in May, 1993.

Mary says she is a little uncertain about plans for after graduation. She could return to Boeing, but has the option of continuing with the Department of Energy. She also wants to interview with some other companies before making a final decision.

Mary says the size of the department is a plus and a minus. Since it is small and not impersonal, the people are easy to get to know and get along with. The bad thing about being a small Department is that some classes are not offered often enough so there is not much choice about when to take required classes.

To improve the Department, Mary would like to have required classes offered more often, and give GRAs the same tuition advantages that are awarded to GTAs.

Graduate Student Profile: Douglas A. Clark



On a personal level, Doug was born at Fort Belvoir, Virginia. He spent his inter-college years as a commissioned officer in the U.S. Army, during which time he worked in a number of unusual and exciting assignments. He has been married for five years to Bonnie, and she is currently pursuing a PhD in Botany (Systematics) here at KSU. Doug enjoys running, weightlifting, and racquetball. He and his wife enjoy exploring the outdoors in their limited spare time. Doug says that most of his hobbies are on a time hold for now, but he does find some time to work on his hobby car - a 1969 Cutlass (hold on to that one Doug).

Doug received his undergraduate degree from Cornell University, Ithaca, NY in 1986 where he majored in Classical Archaeology. Doug is currently working with Masaaki Mizuno in Distributed Systems and Concurrency Issues and is also interested in simulations and modeling. He expects to finish his MS in the Summer of 1993. The high out-of-state tuition rates else-

Douglas A. Clark (continued)

where had a lot to do with Doug selecting Kansas State for his graduate work.

His professional plans after graduation include expecting to work for one or more companies, advanced work toward a PhD and possibly an MBA, and eventually owning a consulting firm. Having his own firm has been a consistent long term goal for Doug. His personal plans are more adventuresome - he hopes to cycle across the continent sometime.

In evaluating the Department, Doug says that it provides a terrific atmosphere for study and that the faculty is genuinely interested in training graduate students in the "art" of doing research.

Graduate Student Profile: John Hatcliff

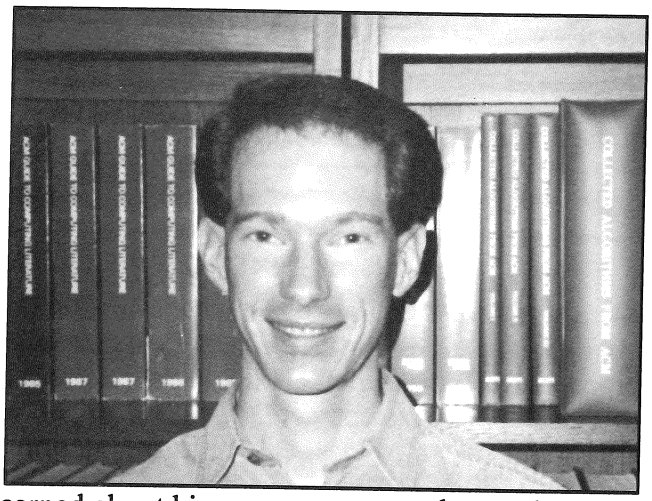
John received his undergraduate degree in Computer Science and Mathematics from Mount Vernon Nazarene College, Ohio, in May 1988. While attending that school he worked as an Administrative Computing Services programmer. After graduation he worked till 1989 as the Director of Administrative Computing Services for the Asia Pacific Nazarene Seminary, located in Manila, Philippines. He then attended Queen's University, Kingston, Ontario, Canada where he received his MS in Computer Science.

John was then accepted into the PhD program at Kansas State in Spring of 1991. His major professors are David Schmidt and Olivier Danvy and he expects to complete his work in 1994. John's area of interest is formal semantics of programming languages but he is also interested in data base programming languages.

John says his reasons for coming to Kansas State are his interest in programming languages, our strong research program in programming language theory, and that our faculty maintains good contacts with other programming language research groups around the world. He believes our faculty members in this group are well-known for their research and teaching abilities.

At this time, John has no definite plans after completion of his degree, but he expects to obtain a post-doctorate research position and continue his research in an academic environment.

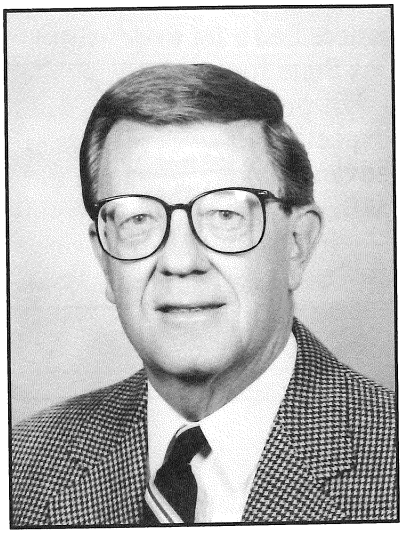
John says he is delighted with the personal attention he receives from his supervising professors. He believes they are very much concerned about his progress as a student and seem dedicated to making his research experience a success. He also feels the relatively small size of the Department contributes to the overall spirit of camaraderie among students, staff, and faculty.



As for the future of the Department, John would like to see the programming languages group continue to build. Since the KSU group is one node of a global group working on program analysis and transformation, John thinks this building could be helped by encouraging interchange of personnel among the nodes of this group.

John also looks forward to more interdisciplinary research with other departments/colleges at KSU such as Engineering, Psychology and natural sciences. He believes the move to the College of Engineering will facilitate that sort of research cooperation.

Our New Dean: Dr. Donald E. Rathbone



Donald E. Rathbone is Dean of Engineering and Paslay Chair in Engineering at Kansas State University. He received his B.S. at Purdue University, his M.S. at Northwestern University and his Ph.D. at the University of Pittsburgh in Electrical Engineering.

He has taught at the University of Pittsburgh, the University of Idaho, Northwestern University and Kansas State University. He was Head of the Department of Electrical Engineering and Professor at the University of Idaho before becoming Dean at Kansas State University. He worked for Westinghouse Electric Corporation and has served as a consultant to industrial firms and government agencies. He is the author of numerous publications and has been active in various societies. He is the Past National Chair of the Professional Engineers in Education, has served on numerous boards and councils, including the Engineering Dean's Executive Board and is the Engineering Dean's Agency Liaison to the Department of Energy. His main areas of interest are in the systems field and in engineering education. He has made hundreds of speeches and presentations at conferences and meetings throughout the country.

Technical Reports in the Department

Many of these reports are available via anonymous ftp. ftp to ftp.cis.ksu.edu; login as anonymous; use your internet address as the password; cd to pub/CIS; get the README file; and read its contents before proceeding. We can also send you a hard copy by just writing to the department. We like to exchange technical reports, so contact Dr. Schmidt if you would like to set up such an arrangement.

92-1 **Back to Direct Style: First-Class Continuations** by Olivier Danvy and Julia L. Lawall.

92-2 **Three Steps for the CPS Transformation** by Olivier Danvy.

92-5 **Prim-algegraic Domains: A Maximal Cartesian Closed Category** by Michael Huth.

92-7 **Extraction of Strong Typing Laws from Action Semantics Definitions** by Kyung-Goo Doh and David Schmidt.

92-8 **Leader Election in Complete Networks** by Gurdip Singh.

92-10 **A General Method to Define Quorums** by Mitchell L. Neilsen, Masaaki Mizuno, Michel Raynal (IRISA).

92-13 **A Flexible Causal Broadcast Communication Interface for Distributed Algorithms** by K. Ravindran and S. Samdarshi.

92-14 **Protocols for Causal Broadcast Message Delivery in Dynamic Groups** by K. Ravindran and S. Ramakrishnan.

92-15 **An Address-driven Architecture for Packet Multicasting in High Speed Multi-service Networks** by K. Ravindran and M. Sankhla.

92-16 **Multicast Models and Routing Algorithms for High Speed Multi-service Networks** by K. Ravindran, M. Sankhla and P. Gupta.

92-24 **Survey of Databases: Structures, Integrity, and Security** by James Slack and Elizabeth Unger.

92-25 **Temporal Deductive Databases** by M.

Technical Reports (continued)

Baudinet, J. Chomicki and P. Wolper.

92-26 **Real-Time Integrity Constraints** by J. Chomicki.

92-27 **History-less Checking of Dynamic Integrity Constraints** by J. Chomicki.

92-28 **Thunks** (continued) by Olivier Danvy and John Hatcliff.

92-29 **Separating Stages in the Continuation-Passing Style Transform** by Julia L. Lawall and Olivier Danvy.

92-30 **Action Semantics-Directed Prototyping** by Kyung-Goo Doh and David Schmidt.

92-32 **Declarative Definition of Object-Oriented Multidatabase Mappings** by Jan Chomicki and Witold Litwin.

92-33 **Finite Representation of Infinite Query Answers** by Jan Chomicki and Tomasz Imielinski.

92-34 **Impact of Synchrony and Topological Information on Leader Election** by Gurdip Singh.

92-35 **Efficient Execution of Write-only Transactions** by Gurdip Singh.

92-36 **Specification of Software Measures** by David Gustafson and Joo Tan.

92-37 **The Transformation of English Text into Concurrent Plans** by Maria Zamfir.

92-38 **Performance of Remote Process Execution in Time Warp** by J.E. Butler and V.E. Wallentine.

92-39 **A Categorical Interpretation of the Correspondence Principle** by Anindya Banerjee and David Schmidt.

93-2 **A Verification Helper for Task Specifications** by William Hankley and Peikun Tsai.

93-3 **Communication Efficient Distributed Shared Memories** by Masaaki Mizuno, Gurdip Singh, Michel Raynal, and Mitchell L. Neilsen.

93-4 **A Sequentially Consistent Distributed Shared Memory** by James Z. Zhou, Masaaki Mizuno, and Gurdip Singh.

93-5 **Analysis of Logical Concurrency in Distributed Applications** by K. Ravindran and A. Thenmozhi.

93-6 **Structural Complexity and Execution Efficiency of Distributed Application Protocols** by K. Ravindran and X.T. Lin.

93-7 **Service Models and Network Abstractions for Data Multicasting in Multi-service Networks** by K. Ravindran and X.T. Lin.

93-8 **Transport Models for Synchronization of Multimedia Data Streams** by K. Ravindran.

Let's Keep In Touch

We really do like to hear from our alums. If you have a change of address, an event you would like others to know about, or would like to locate someone, please let us know.

Name_____

Address_____

Phone _____ **Company**_____

Event _____

_____

Like to contact_____

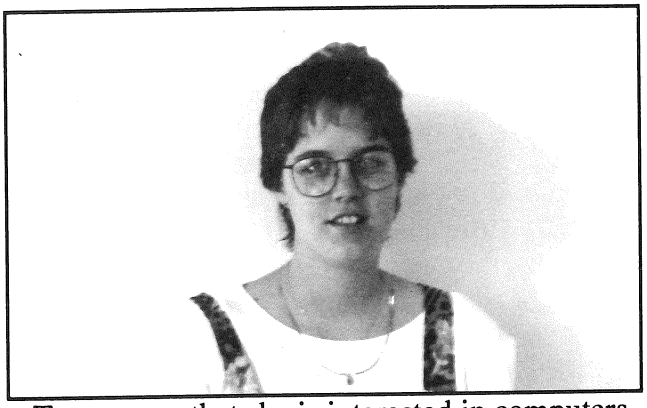
Undergraduate Profile: Teresa Detter

Teresa is a native Kansan, born in Topeka but has lived in Concordia for the past 13 years. Teresa has many academic interests. She started studying Spanish in 8th grade and continued through her first two years at Kansas State. Teresa also enjoyed mathematics and chemistry in high school.

Teresa has earned many honors and taken part in many activities in high school and here at Kansas State. At Concordia she was in the National Honor Society, Kansas Association for Youth, Quiz Bowl team, 4-H, cross country track, basketball, band, pit orchestra, and spring track. She also found time to study and was Valedictorian of her class.

While at Kansas State she has been named as a Dane Hansen Scholar, State of Kansas Scholar, Fuller Award winner in mathematics, and has been one of the CIS Department IBM Employee Scholarship recipients. She is a member of the Golden Key National and Phi Kappa Phi Honor Societies.

This past summer, Teresa worked as summer intern for the State Department of Education. Teresa says she really enjoyed the opportunity to work in a real-world environment and learned a great deal from the experience.



Teresa says that she is interested in computers and computer science for many reasons. She enjoys most aspects of computer science and feels that computer science is a great complement to her interest in mathematics. She expects to graduate in May 1993 with a dual degree in computer science and mathematics.

After graduation, Teresa hopes to find an interesting job that she can really enjoy, one which combines her interests in computer science and mathematics.

Teresa thinks the department is doing a good job in giving students a taste of the many diverse areas in computer science. She hopes we are able to expand our curriculum as the computer science field continues to diversify at a high rate.

The Computing and Information Sciences Development Fund

Private funding continues to be critical to the success of the program, the faculty, and the students. This fact has not changed in the slightest since the newsletter of last year. We still have three major categories which we believe to be primary to the advancement of the Department.

First, the university library has sustained major reductions, forcing the cancellation of many journal and proceedings subscriptions. We have put as many resources as possible into our own library in an attempt to keep current literature available.

Second, scholarship and fellowship funding is the best way to attract quality undergraduates and graduates. The "market" is extremely competitive for the bright student. Thanks to your help, we have been able to attract quality students. For example, we now have about six high school valedictorians in the program, and they have continued to perform extremely well here at the University.

Third, we want our students to be exposed to the latest ideas in computing, and to do so we must be able to invite good seminar speakers, and in addition, support faculty and student travel to seminars.

We established the Development Fund five years ago to help meet our critical needs. If you would like to help us maintain a top quality program, please use the form below. Your employer may provide matching funds. We hope you still consider yourself as part of the CIS Department family and you will want to help with your donation, large or small. We are most appreciative of your support—thank you!

Virg Wallentine, Department Head

Positions Needed for Computer Science and Information Systems Students

A major effort is now underway in the departments within the College of Engineering to identify alumni who may be able to help our students find employment after graduation and to identify smaller companies that would benefit from hiring our graduates but don't have the resources to come on campus and recruit. The CIS Department is working closely with Scott Scrogin in Engineering to develop this database which should be a great help to our graduates and to companies looking for good employees. In addition, we are always looking for summer positions for our undergraduates. If you can help with this effort, please fill out the form below and return it to the department.

Name_____ Address_____

City_____ State & Zip_____

Company_____

We have a possible opening for:

☐ Entry Level Position ☐ Position with Experience

☐ Summer Training ☐ Semester Intern

☐ Other_____

Looking for skills:_____

Contact:_____

Yes, I want to help support the Development Fund!

☐ 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:

☐ $500 ☐ $200 ☐ $100

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_____.

☐ Department Library

☐ Faculty and Student Develpment

☐ Scholarships and Fellowships

This gift ☐ does

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

Name_____

Street _____

City, St., Zip_____

Authorized Signature_____

Business or employer _____

_____

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