Early in the computing era the UAB [1] Medical Center recognized the potential of computers in medical research, and in 1966 the administration invited Dr. Josiah Macy, Jr. ("Jay"), to visit the campus to review the situation and make recommendations for its development. The holder of an MIT Ph.D., Jay was engaged in biomedical research at the Albert Einstein College of Medicine. The administration accepted his recommendations and invited him to move to UAB to implement them. Consequently, in 1967 the "Biophysical Sciences Division" was established, with Jay as Director, containing four small departments: Biostatistics, Biomathematics, Engineering Biophysics and Information Sciences. Jay also held the title of Professor of Information Sciences. Administratively these were joint departments of the Medical and Dental Schools, but Jay claimed that he had a commitment from the campus head, Dr. Volker, that the scope of the Biophysical Sciences Division would be UAB-wide. However, this was not very significant at that time, since outside the Medical Center the university was still at a very early stage of development. Physically, the four departments were scattered among several small buildings that the Medical Center had "inherited."

This was the situation explained to me in November, 1967, when I interviewed for a faculty position in the Biomathematics Department. Jay told me that he chose the name "Information Sciences" to indicate a scope broader than "computer science," which he felt implied a concentration on hardware [2].

[1] The term “UAB” was not used officially until 1969, when the Birmingham campus was designated as an autonomous university within the University of Alabama system. Before that time the campus was headed by a Vice-President, Dr. Joseph Volker, who became the first President of UAB.

[2] Interestingly, the term “informatics” became used in the desired sense in Europe, but in the USA “information sciences” later came to be used in the sense of library science, which caused the department some difficulty.
During my visit I was shown the Medical Center’s computing capability. Joseph M. Fontana ("Joe") was Director of Computer Facilities, which consisted of an IBM 1401 for administrative applications (payroll and patient billing) and an IBM 7040 computer for research computation. Both of these machines were already obsolete, since IBM had introduced the 360 series three years earlier. Joe was also involved in the Cardiovascular Research Computer Unit, which had a PDP-7 that provided on-line data acquisition and analysis services for several research projects.

Additionally, there were several computers closely linked to medical practice. A year or so earlier Dr. John Kirklin had moved from the Mayo Clinic and had brought Louis C. ("Lou") Sheppard with him. Lou had set up an IBM 1800 computer in an on-line closed-loop system to monitor patients and infuse medication during their recovery from open heart surgery. A similar system was being developed by Steven E. Wixson ("Steve") and Eugene M. Strand ("Gene") in the Myocardial Infarction Research Unit, to monitor heart-attack patients.

All of these individuals had an affiliation with the Information Sciences Department. For those closely involved with patient care this was a loose affiliation, since their first allegiance was naturally to their clinical department.

I joined the Biomathematics Department in June, 1968. This department was chaired by Dr. Edward A. Sallin ("Ed"), a UCLA mathematics Ph.D., and the other "regular" faculty member was Dr. Gerald A. Hutchison ("Gerry"), also a mathematics Ph.D. from UCLA.

This was purely a research environment, my own research being mainly in the field of computerized electrocardiography. I "parasited" on Lou Sheppard’s computer at the weekends, when it was not being used for patient monitoring.

At the Einstein College, Jay Macy had been awarded an NIH grant to purchase a large — for the time — computer system to be used for on-line acquisition and processing of data from biophysical experiments. When he moved to UAB, the grant moved with him and this equipment arrived about the same time that I did, in mid-1968.
The equipment consisted of a Scientific Data Systems (SDS) “Sigma 7”
computer, which was a “mainframe class” machine — roughly equivalent to
an IBM 360 model 50 — along with a Sigma 2 to function as a “front end.”
A small team was developing an ambitious multi-user real-time operating
system. The planned mode of operation was for a researcher performing an
experiment to apply for connection to the system, specifying the required
rate of computer cycles. If that rate was available, the experiment was
accepted and the requested cycles were guaranteed to that experiment. If
the cycles were not available, for example if the system was already fully
committed, the application was denied, so as not to impact experiments
already running. This mode was markedly different from the standard time-
sharing operating systems then in use, in which the system’s cycles were
divided into smaller and smaller portions as the number of active users
increased, so that a given user saw the system capability progressively
deteriorate.

Although I was in a different department, I helped with the design of the
Sigma 2 operating system. However, the entire collection of hardware was
chronically unreliable — which was a surprise, since earlier SDS machines,
such as the SDS 920, had an excellent reputation — and progress was slow.
The system was eventually operational, probably about 1971.

Meanwhile, in 1969 the Rust Building was completed and the Biophysical
Sciences Division moved in, so that Biomathematics, Biostatistics and
Information Sciences were in adjacent offices — in an elegant environment.
The building housed a pair of IBM 360 model 50’s on which administrative
and research computing were consolidated, replacing the IBM 1401 and
7040. An array of disk drives was accessible from either of the model 50’s,
so that if one went down (not unusual!) the other could pick up its work. Of
course, the complex operated in “batch mode, with punched-card input.”
As in most data centers at the time, there was a “prep room” containing a
collection of key punches. Users prepared their programs there, then
passed their card deck through a glass wall to a “priesthood” that operated
the computers, complete with flashing console lights! Lucky users received
printed output a few hours later.

Emmanuel Mesel (“Sandy”) joined UAB to create a Clinical Information
Systems research group using the 360s. Although an M.D., his primary
appointment was in the Information Sciences Department, rather than in a
clinical department.

Attentive readers will have noticed that so far there has been no mention of
teaching students. This was about to change.
"Computer science finally seems to have matured into an academic discipline," remarked Ed Sallin, waving a copy of ACM's "Curriculum '68" [3] under my nose. The year was 1970, and later that year Kevin Reilly arrived at UAB to a faculty appointment in the Information Sciences Department; when I asked about his interests he replied "I want to teach courses!"

In my mind, these two comments, unconnected and minor in themselves, were the spark that led to our offering the first CS courses at UAB, in the Spring Term 1971 [4].

I used the word our. Let’s review who we were?

As you already know, Ed Sallin and Gerry Hutchison were UCLA-trained mathematicians in the UAB Biomathematics Department. My appointment was also in that department, but my background was nuclear physics, which I had previously taught at Rice University. Kevin Reilly held a Chicago Ph.D. in Biomathematics, but came to us from the UCLA Institute of Library Research. Joe Fontana, with a mathematics degree, brought to the table extensive practical experience and an encyclopedic knowledge of computers and computing.

What business did this motley crew have offering courses labeled "computer science"? Obviously, none of us had formal qualifications in computer science ... but at that time who did? We had a lot of computing experience, were as smart as most, and confident that what we didn’t know — a lot! — we could learn. So Kevin Reilly constructed an array of six CS courses, based on Curriculum '68, and told the Registrar to list them in the Class Schedule for the coming (Spring, 1971) term [4]; UAB was still very informal at that time, and no curriculum committee approvals were required ... we just did it!


[4] Until 2001 UAB’s academic calendar had four terms per year — Winter, Spring, Summer, and Fall.
As the beginning of term approached we all had doubts, but events had their own momentum, and classes began. I taught "CS 1: Introduction to Programming," using the FORTRAN language, to 20 students. Kevin Reilly taught an assembler-language course (CS 51) and he and I jointly taught "CS 221: Computer Architecture" [5]. Kevin and Gerry Hutchison taught a course on information retrieval. Chuck Katholi, a Ph.D. mathematician who had arrived in the Biomathematics Department in 1970, joined us to teach numerical analysis. Jay Macy and Ed Wilson (from the Engineering School) taught a course on analog and hybrid computing. Not a bad beginning! [6]

The first few CS courses attracted a reasonable number of students, so in 1972 the administration decided to consolidate them in the Information Sciences Department, with myself as Chair. That year we were joined by Dr. Chao-Chih Yang, who held a Ph.D. in electrical engineering from Northwestern University. This greatly strengthened our small faculty, but was the last addition we were able to make for several years. Dr. Yang’s interests lay at the theoretical end of computer science (he later published a book on relational databases).

Within a couple of years we had taught the entire ACM Curriculum '68, frequently learning the material just a few weeks (or days!) before presenting it to the students. This was certainly true of the first compiler course, CS 283, which I taught in 1974. By then we had built the first comprehensive computer science program in Alabama.

An interesting question is why we, a Medical Center department at UAB, were able to accomplish this, whereas neither Auburn nor Tuscaloosa had done so. I believe the answer is that we had the advantage of a single department able to cover the entire spectrum of Curriculum '68 and also that our School of Engineering was only just getting started. The other institutions had the material fragmented between several entrenched departments — mathematics, electrical engineering, and business — so had more difficulty putting it all together.

[5] 200- course numbers were graduate level at that time

[6] Thanks to Kevin Reilly for digging in the archives to recall the exact course offerings.
CIS Department

Later, we found that some of our students were interested less in “hard-core” computer science than in business applications. In 1972 ACM published its Information Systems Curriculum [7] and we used this as a model to extend our coverage, listing appropriate courses from the UAB School of Business.

The Graduate Program

I suppose that we were unusual in having a graduate program long before we had an approved undergraduate program. A proposal for graduate programs (M.S. and Ph.D.) in the Biophysical Sciences Division was submitted in 1971 and approved by the Alabama Commission on Higher Education in May, 1972. The almost-accidental use of the plural “programs” turned out to be important, since it later enabled us to lay claim to an approved stand-alone graduate program in the Information Sciences Department — the only such approved program in the state.

At a site visit, after I had described our ACM-based graduate program, one of the visitors hit me with the criticism “Curriculum ’68 is an undergraduate-level curriculum.” I had to scramble to reply to this! Certainly, in my years on the faculty of the Rice University Physics Department, a requirement for admission to the graduate program was an undergraduate degree in physics.

I fell back on the philosophy of MBA programs, which typically welcome applicants with non-business degrees. The first courses that such a student takes in the MBA program would be little different from those that an undergraduate would take — accounting, for example, is not intrinsically undergraduate-level or graduate-level. The MBA program is judged by the value it adds to incoming students. Similarly, we felt that our graduate program would add value to incoming students with almost any undergraduate degree.

In these early years most of our graduate students were mature individuals working in the Birmingham area as programmers or analysts. They were interested in taking CS courses to upgrade their knowledge and qualifications — that is, they were part-time students. Naturally, this gave rise to a high attrition rate as students became too busy in their employment, were promoted, moved out of town, or took on additional family responsibilities. To accommodate these students we pledged to offer courses at both daytime and evening periods — if a course was offered once at a daytime period, the next time it would be offered in the evening.

Figure 1, taken from the 1975-76 annual report, shows that the cumulative total of graduate students admitted in the first five years was 133.

During the 1975-76 year a total of 66 graduate students, all but four of whom were employed full-time, registered in at least one course (figure 2). Three of the students held the office of president of their company. The group included 19 women and eight minority students; the average age of the group, was 29 years. By the summer of 1976 14 students had graduated with the master’s degree, the first two having graduated in June, 1974.

At that time we were very confident about the job prospects for our master’s degree graduates, but much less so about Ph.D. graduates. For this reason, as well as because of a lack of assistantships, we were happy with a very small Ph. D program — of the students mentioned above, only four were seeking the Ph.D. The first doctoral graduate, Charmane P. May, emerged in June, 1978.
I want to emphasize again that at that time we were still a Medical Center department. However, medical application of computers was only one of the many possible applications of the ACM Curriculum ‘68 material. In fact, few of our graduate students were interested in medical applications. This was an inherently unstable situation!
Undergraduate Students

After we had been teaching CS courses for a couple of terms, we went outside the Medical Center to the “general” part of the university — then known by the curious name of “University College” — with an offer to make our courses available to undergraduate students as a “minor.” This needed no off-campus consideration, and was approved by Dr. Campbell, Vice-President for University College, in late 1971. The Medical Center was not totally devoid of undergraduate programs — for example, there were undergraduate programs in allied health sciences. However, it was unthinkable that we, as a Medical Center department, could win approval for an undergraduate major in computer science — this would have needed the approval of the Alabama Commission on Higher Education.

However, the rules in University College had a provision for students who had specific career objectives: if none of the existing majors was appropriate, such a student could propose an individually-designed “Special Degree Program” (SDP). If approved by the relevant dean, this was accepted as the student’s major. Beginning in May, 1975, the dean of the School of Natural Sciences and Mathematics, Dr. Roger Hanson, was willing to approve SDPs for students who wished to train for computing-related careers. As department chairman, I “guided” students in the formulation of their petitions, which had to include 40 hours of CS courses and a minor appropriate to their career goals; I forwarded them to Dean Hanson with my endorsement. The first student to graduate from this program, Evaz A. Daryooni, received his B.S. degree in June, 1976.

Figure 4 shows that by August, 1976, 29 such majors had been approved. Of these, 17 included a mathematics minor, and as a consequence of collaboration with the local chapter of the Data Processing Management Association (DPMA), eleven of the petitions included a business administration minor.
Non-Credit Activities

The UAB unit responsible for outreach and non-credit activities was the Division of Special Studies (DSS). Throughout the 1970s our department cooperated with DSS in offering various lectures and seminars outside the formal course structure. For example, in 1976 the department cooperated with DPMA to offer a series of three two-day noncredit courses: “Management by Objectives in Data Processing,” “Computer Facility Cost Accounting,” and “Long-Range Planning for Data Processing Facilities.”

ACM Southeastern Regional Conference and Data Processing Conference

In April, 1976, the department hosted the 14th Annual Southeastern Regional Conference of the ACM. Figure 5 is the announcement.
This was a landmark event for our fledgling department! The technical program consisted of 67 contributed papers (one by Robert Hyatt from the University of Southern Mississippi) and five invited papers, and there were 26 commercial exhibits. Approximately 400 individuals participated in the meeting, including computer scientists from all seven states of the southeastern region. Perhaps the most pleasing statistic concerned out-of-town student involvement: a total of 79 students traveled a total of 23,302 miles to attend. We felt that this meeting really “put us on the map”—the fact that Bob Hyatt later joined us to study for his Ph.D. may confirm this!

In the same year department faculty played leading roles in the 20th Annual Data Processing Conference, held on the UAB campus.
By this time there was rising agitation to move the department out of the Medical Center. It was clear that we were offering the only comprehensive computer science program in the state and that students had responded to this. As early as mid-1975 Dean Hanson proposed to Vice President Campbell, that the core of the Information Sciences Department should become part of the School of Natural Sciences and Mathematics. There was, naturally, some opposition from Dr. Macy, who would be losing what was arguably the jewel in the crown of his Biophysical Sciences Division. However, it was clear that the department had long since outgrown the restriction to “bio.”

In June, 1976 UAB President Volker was promoted to Chancellor of the three-campus University of Alabama system and the following February Dr. S. Richardson Hill was appointed President of UAB. I had first met Dr. Hill a decade earlier, when I was interviewing to come to UAB, and he had always been very friendly. I sent him a memo and met with him to try to persuade him on the transfer. Perhaps my key move was to work with one of his senior staff, Dr. J. Stephen Smith, to draft a memo making the transfer and changing the name of the department to “Computer and Information Sciences.” I don’t know how much attention Dick Hill paid to the memo, but the critical point was that he signed it!

Establishing the Department in NS&M

Thus it was that in the summer of 1977 the department became part of the School of Natural Sciences and Mathematics (although we’re actually an un-natural science!) and the core faculty (Drs. Reilly, Yang and myself) moved out of the Rust Building to offices on 15th street, at the west end of the campus.

It was important for us to establish our credentials with our new dean, Dr. Roger W. Hanson, and our new colleagues in NS&M. At national meetings I had met Dr. John Hamblen, of the University of Missouri, Rolla, who had made a specialty of evaluating computer science departments. I asked the dean to invite Hamblen for an evaluation visit; this occurred on August 8-9, 1977. Only 10 days later the dean received the report [http://www.cis.uab.edu/barnard/Hamblen_report.pdf](http://www.cis.uab.edu/barnard/Hamblen_report.pdf) and circulated it widely.

Dr. Hamblen favorably evaluated our efforts to that time and emphasized the important contributions we could make with appropriate support: “UAB will be doing Birmingham, the State of Alabama and the Nation a timely service by getting the CIS department into top gear as quickly as possible.”
With this encouragement, within a few days I had drafted a proposal for a formal major in "computer science," which was routinely approved at the local level and eventually by the Alabama Commission on Higher Education.

Another positive development was that (as the result of an obscure "deal") for the first time we had our own "hands-on" computer. This was a Data General Eclipse "minicomputer," which we were able to house in a room in what is now the Chemistry Building. The machine had a "writable control store," with which I hoped to do research on instruction sets.

**My Exit**

However, I didn’t get to enjoy the new situation for long. In 1978 Vice President Campbell retired and was succeeded by Dr. Thomas K. Hearn, Jr. To my amazement, Dr. Hearn asked me to serve for a year as Interim Dean of Special Studies. I had a strong interest in outreach and I had almost finished UAB’s M.B.A. program, so the opportunity to manage a much larger budget and staff was irresistible.

Consequently, Joe Fontana was appointed Acting Chairman and a search was initiated. UAB was very fortunate to recruit Warren Jones from the University of Louisville to be the second Chair of the CIS Department. Everybody agreed that he was a great improvement over the first Chair!