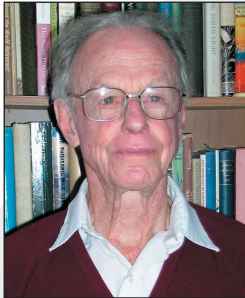


Looking Back at U of C Computing History

An Anecdotal Account of How It All Began

by Nancy Mancell
Information Technologies

Rewind Back to 1960: Dr. John Peck



Dr. John Peck, Professor emeritus, University of British Columbia

The first computing facility at the University was established in 1961 by Dr. John Peck, who was the Head of Mathematics department at the time.

“We arrived in Calgary, from Montreal in the fall of 1959, and for the first night we took a motel. While there, a neighbour pointed across the road to an open piece of prairie and said, ‘That is where the University will be.’

I was to be first head of the Mathematics Department, at what was then the University of Alberta in Calgary. For our first year, classes were held at the Southern Alberta Institute of Technology, while in that year the first building of the university was erected. In the fall of 1960, we moved to our new campus.

I well remember that in those years there were few faculty members, and we all knew each other. When I left in 1969 to go to UBC, the place had grown so that many faculty members were strangers. A few years ago I revisited the University of Calgary and got lost in the campus, unable to locate where my old office used to be.

Around 1960, a small Calgary firm acquired a computer called an LGP 30, and invited us to see it and to program it. I went there and had some fun writing programs for it. The same occurred at the IBM Calgary office, with an IBM computer, whose name I do not remember, but I do remember a console with many blinking lights. After these events, and after talks with the Edmonton Campus, we acquired a computer for our own use. It was an IBM 1620. I remember writing a simple program for it, producing prime numbers, or something like that, and demonstrating its computing power to some visiting faculty wives. One of them, with a surprised look, said ‘But how on earth can that be useful?’

After I had taught some elements of programming to one of my mathematics classes, my students took up the challenge of scheduling examinations by computer. So this was the first attempt at what was to become administrative computing for the university.

In 1966 I had a sabbatical year and went to Amsterdam, where I got involved in the ALGOL 68 Project, a computer language designed for the TC2 committee of IFIP (International Federation of Information Processing). After this year my interests drifted from Mathematics to Computer Science. We introduced some computing courses in the Mathematics Department.

In 1968, I think it was, we had a meeting of the Faculty of Science. At that meeting I proposed that it was time to form a department of Computer Science. I well remember that the physicist and chemists looked down their noses and exclaimed ‘But that is not a Science!’ It was the following year that I moved to UBC to head the new Computer Science department there.

I enjoyed my 10 years in Calgary, while watching the university grow rapidly.”

The new computer Dr. Peck mentions, the IBM 1620 (2K decimal digits – 2 decimal digits per character), had paper tape input, paper tape punch and a typewriter console. The computer was housed in what is now the Science A building. The machine was actually located in the women's washroom.

The computer was aptly nicknamed, the CADET, 'Can't Add and Doesn't Even Try.' Needless to say, it was a very slow machine by today's standards.

Marguerite Fenyvesi



Marguerite Fenyvesi,
Professor and Assistant
Head of Mathematics

The very first employee of this new computing facility was Marguerite Fenyvesi, who continues to work at the University as a professor in and Assistant Head of the Mathematics and Statistics department.

“I was a student in the Math/Stat department at U of A, when in the spring of 1961, Dr. John Peck contacted the department at U of A, looking for someone to work in the summer. He was the Department Head and he started the computer facilities at U of C, or at the University of Alberta at Calgary as it was then, and he had purchased an IBM computer - in those days a very big machine, with paper tape.

I was an active member of the student club in the Department at U of A and the faculty sponsor of our group knew I was from Calgary and asked if I was interested, which I certainly was. When the computer arrived I came to Calgary and spent my time helping graduate students, there were especially a lot in Physics at the time, and faculty to use the computer, thread the paper tape, etc. I later went on to graduate school and was hired as a faculty member at U of C, and have been here ever since.”

Even back in the 60s, computing technology and the demand for computing was moving at a fast pace. To accommodate the increasing workload and the advances in technology, more staff and equipment upgrades were needed. In the fall of 1961, Michael Williams and Anton Colijn, who were math students at the time, came on board. Norman Barnecut began his computing career in 1963 as a part-time student employee. Eventually, these three would develop a lifelong friendship and an infamous history of “tom-foolery.” Here are some of the highlights from their stories.

Professor Michael Williams (Emeritus), Computer Science

“Back in 1961, I was an undergraduate student at the U of C. Dr. John Peck, then Head of Mathematics, was looking for people to help with the newly rented IBM 1620 computer I was lucky enough to get one of the summer jobs - not great pay, but good experience. Somehow, it did not seem strange that the computer was located in a women's washroom (it was the only space available in those days).

In 1962, I was asked to develop a system for scheduling exams and a year later it grew to a system to schedule students to classes. This was at the request of the Registrar. Because the computer had so little memory, I could not include both the number of students sectioned to a course and the number of free seats in the room. To accommodate for this deficiency, I simply kept a record of the number of seats available and subtracted one when I put another students in that class. I completely neglected to see that some sections (particularly the Psychology classes, as I recall) were spread from small tutorials to larger lecture theatres - that resulted in almost all the Psychology students being put into the sections that were in the large rooms. It took a week to sort out the mess.

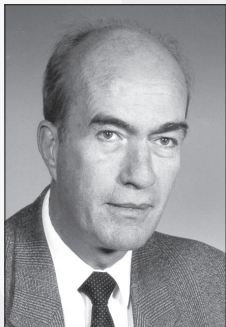
I also recall that nobody told me that the first year physical education courses were to be divided up with males in some sections and females in others - I just assigned them at random - again it took about two weeks to redo their schedules by hand before any classes were held. Despite these early difficulties I eventually did my PhD on the graph theory behind these problems. Anton Colijn took over this task in 1965 when I went off to do my PhD, and learning from my experiences, didn't make quite as many problems for the administration as I did.

More appropriate space was eventually found to house the computer and it eventually was moved to the fourth floor on the Library Block. As the demand for more computing services grew on the campus, a separate computing services department was created in 1966. Eventually the 1620 was replaced by an IBM 360/30 which handled both academic and administrative computing. A couple of years later that was again replaced by two IBM 360/50s, this time located in the basement of the Mathematics building.

I came back to the U of C in 1968 and a year later, I became Head of the division of Computer Science in the Math department. In 1975 the Computer Science department was created with Anton Colijn as its first Head. I worked for Computer Science for about 30 years before retiring.

Anton, Norm and I had a lot of fun playing tricks on each other. One trick I particularly remember is when we changed the hinges on Norm's office door from the side to the top. When he opened his door it went up and in, much to his surprise. Another time we removed Norm's door, put sheetrock in the opening, and painted it the same colour as the walls - Norm's office just disappeared. Norm was a good sport about it all and often gave back as good as he got. Those were the good old days. There does not seem to be time for this kind of thing any more - that and the fact that the bunch of us eventually matured into hard working adults."

Professor Anton Colijn, Computer Science



Anton Colijn, Professor of Computer Science

"My involvement with computing began when I was an undergraduate student here in 1960 in the department of Mathematics, as it was then called. I attended a two hour lecture given by Dr. John Peck on a computer called an LGP 30 (vacuum tubes and magnetic drum memory). I took the manual home over the weekend and thought I understood how it all worked. I decided to write a program to compute sines and cosines using Maclaurin's series. Then, on a cold dark winter night, I went downtown to Royalite, an oil company, and ran the program. Much to my surprise it ran without any errors.

From 1963 to 1965, I was a graduate student, and I spent an estimated 40 hours per week working in the Computing Centre and the rest of the time being dedicated to my thesis, which was on Relativity Theory. During this period, I effectively ran the Computing Centre (since John Peck disliked administrative tasks and delegated much to me), including doing the budget for support staff salaries and equipment. In 1966, the Computing Centre became a separate service department called the Data Centre.

In 1975 I became the first department head for the newly formed Computer Science department when it was split from the Mathematics and Statistics department.

Today, I am a Professor of Computer Science and President of the Faculty Association. The latter, in fact, has taken most of my time in last few years."

Norman Barnecut (retired)



Norman Barnecut,
Assistant Director
of System Services
(Academic)

“My introduction to computing at the University of Alberta, Calgary campus, was as a summer student in 1963. I was working with Anton Colijn and Mike Williams from the Math department. I remember that in the summer when it would get hot outside, the computer would shut down and I would run down to the Chemistry department to get dry ice to cool the 1620 down – there was no air conditioning.

In 1965, after working as a student assistant for some years, I was given a full-time position as a programmer in what would become the Data Centre.

As the University grew, so did the demand for computing resources and people and a separate department came into being. I do recall, even when times were becoming more business-like, silly antics were alive and well – a construction fence had been decorated with a sign displaying ‘Anton is a Fink’ – done in tabulating punch cards. I was not involved, but Professor Anton was not a happy camper. He was unaware there was actually another Anton on campus.

People often talk about the new ubiquitous technology known as e-mail. I recall working on such systems in the early 80s with MIT. In the mid-80s, many French university sites were on BITNET, as were Calgary, Mainz and Oakland. MIT was the gateway site; you could send e-mail using `foo%foomachine.bitnet@mit-multics.arpa`. MIT was connected to BITNET in 1982. I recall taking down the entire French e-mail network for several hours. I wonder what would happen if I did that today.

I spent over 35 years working at the University of Calgary in the computing department and I officially retired in 2003. Even though I am retired, I volunteer my time with IT working on spam control.”

The 70s, 80s, 90s and into the New Millennium

In 1968 the Data Centre was moved from the 4th floor of the Library to the basement of the Math Science building. As is the computing business, upgrades became a fact of life. The computing demands grew, as well as the technology, and the University acquired two IBM 360/50s, one for academic computing and one for administrative computing.

The administrative programmers and support staff were moved to the Administrative building in 1968 and the department of Administrative Systems was formed with Ed Nowokowski as the Head. The academic programmers and support staff stayed in the Math Science building. Eventually, the administrative mainframe was also moved to the Admin building.

Chronological Facts – Administrative Computing

(Tony Barnfather, Director, Business Systems, Information Technologies)

- 1966-1977 Little automation in effect
Depart of Administrative Systems established in 1968
- 1970-1980 Core administrative applications built including Finance, HR, Payroll, Student Records

- All transactions coded on paper forms in faculties and service units
Centrally keyed by Data Entry specialists in Administrative Systems
- 1981-1990 Evolution of real-time/on-line transaction processing function
Major shift to do data entry at the source in faculties and service units
Office Automation project struck in 1982
President decrees that all executives, deans and department heads will use e-mail (AOSS)
MS-DOS and Apple Macintosh personal computers start to replace Display Writers in 1986
- 1991-2000 U of C leader in the era of student “self serve” including registration, fee payments and transcripts
World Wide Web starts to change the way applications are delivered
Y2K an anti-climax – legacy systems
- 1966-1970 Computing department established for both academic and administrative computing with centralised services: IBM360/30 (1966)
360/30 replaces with twin IBM360/50s
- 1970-1980 CDC 6400/NOS and upgrades
Honeywell Multics Time Sharing System – Distributed computing service (1978-1993)
Campus wide e-mail available (1987)
Student computing labs with terminals VIP 7400s
- 1981-1990 Student labs upgrade to PCs
Windows and Macintosh PCs become a requirement in labs
- 1985 Dial-in services available
- 1985-1992 U of C acquires Canada’s first university-based supercomputer, the CDC Cyber 205 for High Performance Computing. One of the fastest machines in the world at the time of installation.
- 1991-2000 IBM AIX replaces Multics (1991)
Worldwide e-mail available
Laptops
Remote Access
The Internet new on the scene (www)
- 1998-2007 Installation of phase one of the MACI Alpha Cluster, with 30 DEC Personal Workstation 500s, a file server and login machines connected with high-speed Myrinet. MACI, the multimedia advanced computational infrastructure, was a joint project between the Universities of Calgary, Alberta, and Lethbridge.
- 2000 IBM Linux replaces AIX
- 2000-2006 Blended Learning Technologies: Virtual classrooms, Web-based audio conferencing, video conferencing, Pod casting, Blogs & Wikis
More web-based applications: WebMail, WebDisk, WebCalendar, WebWare, InfoNet, Degree Navigator, MyUofC portal
- 2006 Wireless Services available across the campus
- 2003-2008 WestGrid equipment designated for the Calgary site is installed. Lattice, consisting of 40 Hewlett Packard ES45s connected with Quadrics form the

fastest machine for parallel codes in Western Canada. WestGrid, a \$50 million project, is the successor to the highly successful MACI, crossing provincial borders (British Columbia, Alberta) and involving multi-institutions.

2005-2009 A second phase of WestGrid deployments brings “matrix” to Calgary. Matrix is made up of a 128 node Hewlett Packard cluster of Opteron servers connected by an Infiniband.

Over the past 40 years, we have seen monumental changes in computing technology and in the delivery of services.

As stated by Bharathi Venkatesan, a retired manager of University Computing Services, “The name of the game was constant change in equipment, operating systems, application programs and service offerings. Even the department name was changed many times - The Data Centre, The Computing Centre, Academic Computing Services, University Computing Services and at present, Information Technologies.”

As mentioned in the anecdotal histories at the beginning of this article, the department has always played a key role in hiring and mentoring U of C students. Today, Information Technologies participates in the U of C Co-op and Internship programs and has many students on staff.

In 1996, there were more major changes when the departments of Administrative Systems and Communications Media were brought under the umbrella of University Computing Services. The name of the department was then changed to Information Technologies which more reflects the department’s diversity.

Information Technologies’ mandate today is much the same as in the past, focusing on the technological needs of the students, faculty and staff as well as keeping abreast of the rapid changes in computing and communications technology today.

A special Thank You to the following contributors for their delightful stories and or stashes of photos and collectibles:

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