

# The NDSU ACM Computer Consultant Program

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The NDSU ACM Computer Consultant program has been helping people for over twelve years. Many people take it for granted, as something has always been there and that will always be there to help. Since the program's inception, it has had a varied, colorful history. Its original purpose and function have changed over time. It has had its share of problems, but it has also had several benefits and lasting successes.

## I. History

The ACM Computer Consultant program was founded in late 1986 by then ACM Vice-Chair John Ortberg. He says that "in one of the first fall [ACM Club] meetings, the idea was brought up about staffing students in the library computer cluster to help other students deal with the computer-related questions about the systems that were on the campus."<sup>1</sup> He knew the idea had merit, but he also knew that people wouldn't work for free. John talked with the computer center staff, and faculty of the CS department. All were very supportive, but none had the budgetary resources to fund the program. Eventually, he was directed to the Office of Student Academic Affairs. Academic Affairs suggested that if student government could be convinced to fund part of the program, they would offer up matching funds and manage the payroll. Student government agreed, and with Academic Affairs' matching funds, the Consultant Program was born.

The first year was one of trying to win constant approval from the University, with statistical data to back it up. The first year's budget was around \$6000, which lasted through three quarters (fall, winter, and spring). Original wages were \$3.25/hr and they covered about 40 person hours per week. Around that same time, the consultant program started holding seminars for students on behalf of ACM. These included basic UNIX, CMS, and other resources the general student population didn't know about. The consultants also started selling disks in the cluster, to make money for the ACM Club. The campus bookstore was prepared to "go toe-to-toe"<sup>1</sup> with the program and contest their right to sell disks in the cluster. Eventually the bookstore backed down.

In the next year (87-88), the budget increased to over \$10,000. Ortberg doesn't remember why the increase was so large, but does say, "whatever we did seemed to work."<sup>1</sup> This comment mostly reflects the difficulty in statistically quantifying what exactly the program did (and does to this day). Along with this budget increase, hours were expanded, and consultants were staffed in other another cluster on campus. Wages rose to \$3.40/hr. The library cluster was expanded to include more space for machines and discrete office space for the Consultant Program. This proved to be important, as on-duty consultants could stow their books and work there without worrying that it would be disturbed, moved, or stolen.<sup>2</sup>

From 88-93, the program grew slowly, but steadily. The budget grew from \$16,000 regularly each year to around \$32,000 for the 92-93 academic year. During that time period, there were five managers, most of whom each served under the previous manager as the assistant manager, although there was no pay distinction between consultants and the assistant manager. The consultant manager purchased a black NeXT cube in 1988, for use in scheduling,

documentation, and other managerial duties<sup>3</sup>. In general, consultants made minimum wages and eventually had their own lockable office space in each of the respective clusters they served in. This was achieved through cardkey access tied to students' university ID cards in the computer center, and a key checkout at the circulation desk in the library.

In the early 1990s, the need was forecasted to build a dedicated computer center. Feedback and lobbying from ACM and the Consulting Program made sure that adequate space was allotted to them, to meet their respective needs<sup>4</sup>. The IACC opened in January 1994 and the consultant program moved into an office in the main computing cluster.

In 1994, the consultant program in the IACC computer center helped people with their problems, and Cluster Monitors (not affiliated with the program) took hourly facility counts, handed out laser output, and did other administrative things, such as enforcing cluster policies. In the library that year, the program assisted people, took care of laser output, did hourly counts, and everything that the Cluster Monitors did at the IACC. Two consultants were on duty from 8am-5pm and 6pm-10pm at the library, and two on duty from 9am-11pm at the IACC. Weekend hours varied, and breaks/holidays were strictly on a volunteer signup basis. The consultant manager was Robby Njos, who generally had everything working timely and smoothly. Schedules were out before the semester began, and were finalized within the first week of school. This allowed students to get into a comfortable routine while the semester was still getting started. The budget for the academic year was \$35,358, with \$12,000 coming from Student Academic Affairs, and the rest from student government. Students were making \$4.50/hr and many worked long hours for the program, so only about 10-15 consultants were needed.

In 1994, Chad Dubuque took over as the Consultant Manager and was also elected Chairperson of ACM. This created a concentration of power that perhaps was not in the best interests of ACM or the consulting program. He made certain policy decisions, (such as the consultants' non-need for updated hardware in consultants' offices) that were finally being overcome in late 1997. Personal agendas sometimes overshadowed professional ones. His vision was persistent, however, and he did expand hours and institute a skills-testing scheme as part of the hiring process. He also moved the second on-duty library consultant over to the IACC, so that during peak hours (12pm - 8pm, typically), three consultants would be on duty there. The budget for the academic year 1994-95 was \$39,500, and students were receiving a \$0.15 raise per semester that they had worked for the program. This also marked the year that ITS (Information Technology Services - NDSU's IT department) took over Academic Affairs' \$12,000 subsidy of the program.

Donovan Kruger took over in the Fall '95 semester. Dubuque had been an absentee manager for a period of time previously, so without his persistent personality, the vision and attitude of the consultants (and the program) was ailing. Kruger, an MIS major, immediately took control and laid everything out for those working for the program. He also instituted several excellent policies, organized the program's documents on the NeXT machine, instituted certain file naming conventions, and made sure everything was working well for the consultants as individuals. Under his direction, hours were increased to 8am-1am at the IACC, and 8am-5pm / 6pm-11pm at the library. Kruger also clashed with student government over budgeting, which ended with student government eventually cutting their portion of the program's funding entirely. He then pursued the newly-formed Technology Fee Committee for the remainder of funding cut by student government. It was approved and the program again prospered under his guidance and direction until his graduation in May 1997.

Shortly thereafter, Debra Myers was hired as the new consultant manager. She did not have any experience as a consultant in the program, but the ACM Executive Council deemed her the best candidate of those that applied. After several weeks, she quit unexpectedly and left with virtually no notice. This forced ACM to scramble to find out who else that had been considered for manager and was around at that time to take over the program.

Chris Fish was hired to take over and pretty much had to start from scratch, as he did not know any of the managerial policies or procedures the manager needed to understand. In November 1997, Eric Christesen was hired as his assistant. During this time, some consultants

expressed doubt as to the direction and leadership of the program. Fish kept the program limping along, but did not make many leadership decisions when pressured by ITS and other management. He did not communicate well with the consultants with regard to management or to management with regard to what the consultants were thinking/feeling. The 1997-98 budget was \$70,866. This marked the second year that the program had been funded exclusively through ITS and the Tech Fee.

After Fish graduated in May 1998, Eric Christesen became manager. This provided the first continuous managerial transition since Njos graduated in 1994. Nathan Duffy started as assistant manager in August 1998. Like his predecessor, Christesen did not exert much managerial decision-making power when dealing with the consultants or management. If nothing else, both Fish and Christesen must be credited with keeping the program going, as without them, it probably would have languished and eventually died.

Following Christesen's December 1998 graduation, Nathan Duffy became manager. He immediately expressed his feelings, intentions, and vision for the program. Many were happy to see that someone was going to stand up for them and the program, although some disagreed with his tone and delivery. The NeXT machines still serve their original purpose, as primary tools for the consultant manager and his assistant. Hours for the next year remain mostly unchanged since 1995, although the number of people on duty at one time has probably changed slightly. Holidays and breaks are still handled by volunteer sign-up. The currently proposed budget for the 1999-00 academic year is around \$82,000, with the hourly wage averaging \$6.25/hour.

## **II. Purpose / Function**

The original purpose of the program was to help students with their computer-related questions in the library computer cluster. At that time, there were clusters in the Main Library, engineering building, Pharmacy Building and the Family Life Center (FLC).

Around 1990, the program had an office at the FLC, which at the time was one of the larger clusters on campus. When the new computer center (IACC) opened in January 1993, the FLC office closed and moved over to the IACC. The IACC featured eight cluster/classrooms and one large cluster, which allowed the consultants to serve more people from one centralized office.

During this time, the consultants also broadened their vision to include faculty, staff, and basically any authorized users of the cluster who needed assistance. They have also assimilated other duties that were often previously duplicated by other positions. These include taking hourly counts of how many people are in each cluster, basic printer maintenance (filling paper, replacing ribbons/toner), checking out CD-ROMs, headphones, and other small items, and enforcing cluster rules and policies.

Inevitably, it also serves as a reference point for all kinds of other questions. These range from "Where is Morrill Hall?" to "Why isn't my dialup script working?" and beyond. If consultants can answer the question, they do. If they cannot, they try to direct the problem to the resource best able to solve it. Even if a consultant does not know the answer, generally they know who does, or where to find it.

On behalf of the Student ACM Chapter, the program sells disks in both the library and IACC offices. This has graduated from 5.25" disks to 3.5"s to, most recently, ZIP disks. Prices are competitive with the campus bookstore. Student ACM Memberships can also be purchased in both offices, which allows people to get in contact with ACM even when the ACM office is closed. The consultant office has a regular, set schedule, whereas the ACM office does not. For a time, student web server space was also sold directly through the consultant office. Because of paperwork and other administrative details, this was discontinued. When students come to the office looking to rent web space from ACM, on-duty consultants have a small handout that details how to get in contact with the administrators of the student web server. It isn't a perfect arrangement for serving students' web needs, but it does work.

A side purpose is to serve as "technology councilors," expressed James Walsh<sup>5</sup>. In dealing with people who are inexperienced with computers (or are complete technophobes),

consultants bridge a gap between technology and the uninitiated. Often, the most important thing is to defuse these newbies' fears about computers. With that fear gone, the user is freed to explore everything that a computer is and can be (often returning many times to ask questions about this or that). We as technology professionals often forget what it is like to be a newbie and often assume that everyone should be as technically inclined as we are. Spending some time in the clusters, doing what the consultants do, puts that assumption soundly to rest. As I like to tell newbies, "We all have to start somewhere. It's just that we started in that somewhere place a long time ago."

All of these things have grown together over time into a peer resource available to all students, faculty, and staff.

### **III. Problems**

The primary problem identified by nearly everyone associated with the program is that of funding. When the program was founded, half of the budget came from Student Academic Affairs and half from student government. Each year thereafter, the manager had to lobby student government for funds and basically hope that they would grant enough funds to continue.

During the 93-94 academic year, the ratio had increased to where student government was paying for 2/3 of the program, and the Academic Affairs subsidy 1/3. During the 94-95 academic year, ITS assumed Academic Affairs' portion of the funding (which was about \$12,000). Since that time, the program's budget has increased (along with the number of responsibilities), although ITS's contribution has not.

Things remained pretty much unchanged through 95-96, with the budget increasing about 9%, and funding continuing from both ITS and student government.

During 96-97 academic year, students had to pay a new fee, called the Technology Fee. It was instituted to pay for new technology-related projects and ideas. It was not meant to subsidize ongoing projects with the idea that if a project merited continuing after initial funding from the tech fee, it should find other methods of funding.<sup>7</sup> The program received funding from three sources that year, student government, ITS, and the Tech Fee Committee. Although it was difficult to coordinate between the three entities, the program was funded sufficiently to continue another year.

When budgeting rolled around for the next year, it was expected that all three sources would again participate in the support of the program. However, due to a decrease in student activity fee funds, student government denied the program its entire requested budget (about \$22,000). This resulted in much frustration and scrambling to amend the tech fee request and lobby the tech fee committee for the additional needed funds. For a time, there was serious doubt as to whether the program would be able to continue in its current productive manner. The Tech Fee Committee did approve the additional funds, along with the original request, so the program did continue for another year.

For the 98-99 academic year, the Tech Fee Committee again approved the necessary funding to continue the program. This marked the second full year that the program was funded exclusively through the Tech Fee and ITS.

For the 99-00 school year, the program wanted to again pursue student government for at least some of the program's budget. After further discussion with ITS, this was not pursued because the funding from student government was neither guaranteed in whole nor in part. It is the intention of the program to try and work with student government to get some type of promise or letter stating that they will guarantee at least some funding for the next school year (00-01).

Twelve years after the program began, the same basic lobbying procedures are still being used, although the funding sources have changed. The program still does not have a permanent source of funding, even though feedback consistently indicates that the consultant program is an indispensable resource to students, faculty, and the university.

Other, less bureaucratic problems have often surrounded the consultants themselves. The first problem is that people of the right knowledge, ability, and demeanor are extremely difficult to find. Working in a customer service environment requires patience, communication skills, and

technical knowledge. Of those, technical knowledge is probably most easily taught. Even after finding and hiring talented consultants, it is even more difficult to retain them, as they can often make more money doing other things elsewhere.

Another important problem is the issue of professionalism in the workplace. In the past, some individuals have had a hard time staying professional. Whether it is off-hand comments about an individual out in the cluster, being rude or unhelpful to someone needing assistance, or acting in a manner detrimental to the image of the consulting program, it has reflected poorly on the program. Much of professionalism is common sense and thinking about what you are doing or saying before doing it. Reminding consultants of these obligations periodically has been the best way to keep people pointed towards the professional level they should be at.

The issue of visibility came up several times late in 1997, and several solutions were put forth. Over the summer of 1998, unprofessional, substandard-quality vests were purchased with the intent that the consultants wear them while on-duty to increase visibility. The consultants were upset that they had not been apprised of the situation or allowed to participate in the selection process. The assistant manager took consultants' feedback and went to ITS with their concerns. The vest issue was not going away, so the assistant manager sought alternative vest implementations. Of those alternatives, a twill, sweater-like vest was agreed upon. The name of the program and the ACM logo were embroidered onto the vests, to solidify their image out in the clusters. ITS did not like the color, citing that it was not "visible" enough. The assistant manager countered with the idea that if all on-duty consultants are wearing something consistent, then students' expectations will be altered and they will know what to look for.

Another half-problem is the lack of consistency between consultants' knowledge areas. This has been addressed in the past by getting consultants to share their various tricks and solutions with each other through direct communication, FAQs, and other documentation.

#### **IV. Successes / Benefits**

The biggest benefit is that the program provides a dynamic problem-solving resource where people can go when they have cluster-computing problems. Students have somewhere to turn to when they are having problems with Word, Excel, the Web, programming, and more. Many students don't know much about the high-tech software that they are asked to use on a daily basis. Students can more comfortably work on their projects and explore other things, with the knowledge that if they get into something they cannot figure out, they can always ask for help. Likewise, professors have another resource they can mention to students when they assign computer-related things in class. This eases the load on them, allowing them to answer more specific questions related to their respective fields. It also directs students to some place they may very well get a better explanation on how or why something works the way it does in the cluster.

The program also provides invaluable experience to CS/MIS majors, and to a larger degree, anyone interested in computers. Working in this unique environment teaches communication skills, crisis management, and prompt, precise problem-solving skills that can't be taught in the classroom. These are skills that all employers look for. One former consultant testifies "The last three years at [my employer], I spent a lot of time being a mentor to new employees. My manager saw that I was pretty good at helping new employees and asked me to do it on an on-going basis."<sup>6</sup> He goes on to iterate that it was his experiences as a consultant that made him so effective as a mentor.

A distinct benefit the consulting program holds over other student-held positions at the university is the hiring process it uses. The manager posts signs and solicits applications from the student body. This ensures that people applying are at least interested in what the program is about. The process also does not have to use the work-study student pool, where students may not necessarily be qualified or interested in the program. The program is managed by students, employs students, and is a resource for students. From the manager to the newest consultant hired, all are students first and computer professionals second.

Other basic benefits include being on campus, so those who live close to (or on) campus don't have to drive or incur other transportation costs. Wages also fall into this category, although they could always be better than they are. More good consultants would work for the program longer if they were paid more. A related fringe benefit is that between questions, consultants are free to work on homework, surf the web, or do other personal work in the office.

## **V. Conclusion**

While it may seem that the problems have outweighed the benefits, it is always easier to identify shortcomings and things we could do better. The things we are doing correctly or properly we take for granted - something we should never do. They are something to build on for the future and fall back to when things are rough.

The program has lasted over twelve years on largely a year-to-year existence. In a university setting, that is nothing short of miraculous. The program recorded over 15,000 people helped in the last year (1998). While that number is not getting astronomically larger, the questions students are asking these days are getting harder. As a program, we must adapt to the changing landscape, while still preserving our identity somehow.

In the end, the consulting program has made computers more useful and accessible to students, faculty, and staff at NDSU.

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