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(Track 1 begins)

LF
We're here today with Bruce Arsenault, who has been associated with the college for
many years; how many Bruce?

BA
Since 1992.

LF
'92. Okay. You were here as a student?

BA
Yeah, I started out as a student attending Waterbury State Tech, because at the time as far
as I knew the college hadn't really merged. Prior to that I'd been in the military and I was
actually applying to here from the military. I was down in Fort Bragg, North Carolina and
I applied. The first contact I had with someone in the college was Lisa Botto, and she was
very helpful in getting me all squared away to come to school in the following fall.

LF
Lisa was a secretary in the library after that, long after that.

BA
When I talked to her she was in financial aid, cause I was trying to get all my financial
aid stuff situated. I was in the military so one of the things I did have was a Veteran's
Waiver for most stuff but there were some things I was still going to have to pay for.

LF
Were you from Connecticut?

BA
I was originally from Connecticut. I was born in Danbury, Connecticut. I grew up in
Newtown. I have a brother and sister that were also raised in Newtown for the majority of
time. I graduated from Newtown High School in 1986 and I then started attending what
was UConn Waterbury campus for an electrical engineering program. I was there from

'86 to '88, to right before I went into the military. I went into the military for communications. I was basically a transportable telephone operator-maintainer-repairer-type person. So, an electronics background there. There's always been the interest in electronics and computers.

LF
What branch of the military were you in?

BA
I was in the U.S. Army. I did end up going over to the Persian Gulf during 1990 and thereabouts. That's why I ended up with some of the benefits as far as education-wise. Plus one of the reasons why I went into the military was because I was thinking, "I need money to go to college." I was kind of thinking that all up front, so that was one of the reasons why I enlisted. Plus I got to see parts of the world. I got to see Germany while I was in the military. I got to see the Persian Gulf, like Saudi Arabia, Iraq, some areas like that. I also traveled a little bit and saw bit some parts of the United States in the process, because I was in the military.

LF
Were you in a combat situation there?

BA
The only combat situation would have been when I was over in the Persian Gulf. I never had to actually fire a weapon or anything but kind of scary driving in the middle of the night with no lights on, these five-ton and two-and-a-half-ton vehicles. Like I said, I was in communications so we were always in support of the troops out there. So they wanted basically to pick up a telephone and be able to make a phone call to wherever they needed to. That was my job, to make sure the call went through.

LF
What kind of technology were you dealing with then, was it fairly well advanced?

BA
For the time, it was very well advanced. It was kind of like a Ma Bell on wheels. Typically there was, each company in the communications company had their own little Ma Bell and we'd just interconnect all these little telephone switches between one site and another. They'd be separated by 50 miles, a hundred miles, sometimes thousands of miles going through satellite, so it was high tech but the military paid lots of money for that stuff way back when.

LF
Was the technology that you used there, did that have any connection with what we have now for cell phones and things like that?

BA

It was a precursor for a lot of stuff you see out today. But by today's standards everything is much more advanced. They were, in the military, they were using analog and digital telephones. Nowadays you see mostly digital in businesses, analog phones in your homes, so there was a lot of parallel there but nowadays it's going more all towards digital-type technology, especially cell phones, the Voiceover IP stuff that's nowadays going on.

LF
So you got a good background.

BA
Oh yeah.

LF
So you came back from overseas, you were finished with your military service, and you decided you wanted to pursue ..?

BA
Actually when I came to Waterbury State Tech I was looking at the Electrical Engineering program so I enrolled in the Associate in Science, Electrical Engineering. I was actually in that program for a full year, full-time, and then immediately I started working for the college when I started coming to school here. Initially I got placed in Public Safety, and Lisa Botto - I forget her name at the time but we'll say Lisa Botto - cause that's how I best remember her, she saw that Public Safety really didn't use me. I was supposed to start work and they didn't use me. So she's like, "No that's not going to cut it; let's move you to the IT department." So I started working for Judy McCarroll. That was an awesome experience, to work for someone like Judy. Immediately after working with her they started growing the IT stuff tremendously so there opened up a technician full-time position, and in '93 I applied for that, and that's when I started working full-time for the college, as a Tech I.

I continued going to the school for my Associate in Science but it was just part time then. That's fine, I didn't have a problem with that. Because I was working with the computers I kind of decided, "I think I like the computers more so than the electrical program," so I said, "You know, the electrical engineering stuff is good for a background but I don't think I want to pursue that on a long-term basis." When I went to UConn back in '86 to '88 I was also pursuing an electrical engineering degree but I didn't do that well academically, initially. That was one of the reasons I said, "Well, I need money to continue on." So that's why I went into the Army and when I came out I knew I still wanted to go to school, and that's why I originally went for the Electrical Engineering program but once I got into the computer area more so, I just decided I wanted to change and go that route, it was just more enjoyable for me. I did it like that. I still able to use some of my background though from the electrical and electronics, so I enjoyed that.

LF

You mentioned working working with Judy McCarroll was an awesome experience. Can you tell us a lot about that? She was one of the first, I think, department heads in IT? Or was it even called IT? Or Computer Services?

BA
Computer Services was what we were initially called. Prior to her was Kenneth McBride, and I don't really know much about him. I don't know if he accomplished a lot, I just can't really say much for that. However Judy McCarroll was very determined. When she set her sights on something she just went to the max and I really respected her because she was one that wanted to get things accomplished. She had a vision to really do well at the college and make things happen.

When I first came here we barely had any computers and what computers there were were not even connected by a network. The only thing that we had were terminals that were connected back to the System Data Center in Hartford. Everyone did their e-mail through these old terminals and it was all text-based. There was no graphical World Wide Web at the time. We gradually started putting in little networks at the school. Initially we had no network wiring, it was just these old terminal servers that allowed these old VAX terminals, VT120s, 220s, and all this other equipment, to connect over. It worked, but it wasn't pretty.

One of the challenges we had back then was the portable buildings were very susceptible to lightening strikes. So the portable buildings, which Payroll at the time was occupying because Kinney Hall was under construction; actually we had a lot of people out in the portable buildings at that time; we'd be out there almost every other day trying to fix issues because if any type of lightening storm came through it would generally zap these ports on these terminal servers. My first foray into …

(Track 1 ends)

(Track 2 begins)

BA
… the computer department was, "Let's try to figure out why these things aren't working." That was a lot of what my focus was. The other focus was maintaining some of the computer labs. When I first came here there was a definite division between Waterbury State Tech and Mattatuck. There was quite a bit of animosity as well, unfortunately. I never really took sides on anything; I was new to the college; other than I had really signed up for Waterbury State Tech, other than that I really didn't know any better, or care. So Mattatuck used to do their own computer labs for the most part, so Judy was really responsible for the administrative offices and also the computers mainly on the tech side. I would always help her maintain the computers on the tech side and also any administrative offices like financial aid, payroll, whatever, we would have to maintain their computers, or at the time it wasn't even computers, it was terminals. Computers kind of came along a little after that.

So some of the challenges were to get everyone where they'd eventually have computer access. Switching over from these old archaic systems which worked but there was challenges involved. Judy McCarroll was a pleasure to work with. She kind of was a little rough sometimes. Some people didn't know how to deal with her but she was very knowledgeable. As long as you did as she asked she was very pleasant to work with. You just didn't want to slack off. She wasn't one to like people that were fooling around all the time. She wanted stuff done and that was it. But on the flip side, if you worked with her she'd do anything for you, so that's one thing I did definitely like about working with her.

LF
Was it unusual back then for a woman to have so much knowledge about the computer world to be the head of a department?

BA
I think it was. I think some people might have resented her a little bit, at the time. But I had a lot of respect for her. She taught me some things, I taught her some things. I'd been working with computers for years just as a hobby. I had taught myself a lot of things. She knew a lot of programming and a lot of upper level stuff but I knew a lot of more trouble-shooting, tech support-type stuff. So we would teach each other stuff like that. She was very knowledgeable about the overall workings. She wasn't afraid to learn either. If there was something she didn't understand, she'd go take a book, teach herself over a couple of days' period, on her own time at night, and then come back and say "Okay, let's go tackle this." It was great. It wasn't like she wanted to wait around for everything, she was a go-getter, she just wanted to accomplish things. I saw her do some things as far as the initial parts of the network that her predecessor evidently had a lot of difficulty with.

LF
So it came naturally to her?

BA
I think it did. If it didn't, she at least knew where to go to look for the help. She was very resourceful in that manner.

LF
So back then, a lot of what was going on was self-taught? Did you also take courses outside?

BA
Both Judy and I did end up taking some courses from Digital Corporation; they're no longer around, they became Compaq, which then has been bought out by HP. But Digital Corporation offered courses on VMS, which was what the college was running initially for the email and also, I don't know if you remember MARCOS, which was a student information system? Basically, I talked to Debbie Sabia from our department; she said before MARCOS there was punch cards; she's been around for that long. She said that

she remembers doing all the punch cards and then eventually MARCOS came out where it was semi-graphical, it was still more text-based overall, that ran over these terminal systems. That required a lot of maintenance, as far as keeping the terminals up and running because of like I said the lightening strikes and stuff like that.

Refresh me where I was going with that, though. I'm sorry.

LF
In terms of where you've learned anything. You had said a lot of it was self-taught, and I asked you if you went outside on the training…

BA
On the training. Both Judy and I, we attended some courses on the VMS stuff, on something called PATH-WORKS, which was the predecessor to the networking that we're using now, it was something called LAN Manager - just, those were the types of things that were used to start networking the college. Judy liked to get on the forefront of things. We first networked financial aid, then we networked Henry Cipriano's class, which was a programming class, and we networked one other room, E502. Those three labs were done with OS2, which is an older operating system, but it was an awesome operating system at the time. That was done, and then we switched over to PATH-WORKS right after that. The PATH-WORKS was when we started rolling it out to all the campus, but it was a very gradual process. PATH-WORKS was when everyone started getting actual computers, they were running DOS and at least Windows for Work Groups. That's when everyone started connecting to the network, actually started sharing files through the network, started sharing printers at the time, the email was being done through the computers more so. The training, we had to learn how to use the PATH-WORKS and also how to manage the VMS mail system. We probably both went through maybe 6 to 8 weeks total, of different classes. It took some time, and we couldn't always necessarily go both at the same time. Sometimes she would go for some, I would go for some, cause we had to still keep coverage at the college.

LF
What was happening at Naugatuck Valley, was that fairly representative of what was happening throughout the community college system?

BA
Yes it was. Basically they were trying to pool the resources and get everyone up to speed and try to get them all doing the same thing when it came to the PATH-WORKS.

LF
But our campus being one of the biggest, you had more…?

BA
I think we were on the forefront as far as doing a lot of that. We did actually a lot of the network wiring ourself initially. We didn't hire that out because at the time, back in '93 - '94, there wasn't the codes involved as there are today as far as no one really cared. You

threw the wires down the hallway right on top of the ceiling, they came down the wall, you just put a little raceway to cover it. Then you tested it, make sure it was going to work. But there wasn't the codes that said oh you had to fire stop this, you had to do all these other things involved, and it had to be terminated a certain way. Basically I probably worked with other students doing the wiring probably for about a year and a half doing it ourself. We probably installed about 3 or 4 hundred different cables throughout the campus. What we'd do is have John Koplar run the cable down the hall typically and then we would terminate it. Because it took some skill to terminate the wires, and test it, but as far as running the wire, at the time we really didn't care, we didn't know that oh, you should really be hanging this in these special hangers, it should all be bundled a certain color, labeled a certain way; there wasn't the standards that there are now.

LF
You were on the forefront.

BA
Yes. We still have some of the old cabling left, which needs to be removed at some time, but it's still around and it still would be functional today too for that matter. It would operate at slower speeds in comparison to the new cabling that we have today.

LF
Did that all feel really exciting cause you were pioneers in a new world and you did what you loved?

BA
It did. I actually had done some outside work doing some of that type of stuff because, "Oh I learned how to do cabling like this." Well there are some businesses that needed to have some network cabling done so I had done some outside work as well. It was awesome because I actually knew how to do it myself, I knew how to test it. It's something that you felt good that you could accomplish something. Oh, I could connect these two computers and make them talk to one another, make them - at the time the Internet stuff was …

(Track 2 ends)

(Track 3 begins)

BA
… not that prevalent but actually sharing files was more. Initially the Internet stuff that we had was more text based over the terminals and then it went over to the computers in text-based initially as well, and it probably took about a year or two before it actually started going into a web browser where it was the World Wide Web. We used to use links for the text, searches, and Gopher, and there was one other which I can't remember the name of it, that allowed you to go retrieve information but at the time it was more research-oriented, it wasn't your marketing, back then it was no marketing even thought

of. It was all, when you did Internet searches you were actually tying into educational-type research, it wasn't all your advertisements that you see today. The Internet has definitely changed quite a bit since the initial phases.

LF
A few minutes ago you said something was an awesome operating system. What constitutes something that's awesome in terms of an operating system and how have they changed over the course of these years of technology?

BA
OS2 was out years, out so long, before all these other operating systems, like Windows NT was what everyone's probably more familiar with, Windows2000, Windows2003, which is what we current, Windows2003 is active directory. But OS2 was a Windows-based program but it was made by IBM and it was made off of LAN Manager which is what your Windows NT and everything else is basically derived from but they were just so far ahead of everyone. They had already been integrating that type of stuff for a couple of years. Novell was also very popular at that time. Back in '92 - '93 the only thing you really heard of was OS2 and Novell. But OS2 was more of a Windows-based, that anyone that was around computers could really appreciate because it was very graphical and just fun to use. It had a lot of nice features. It was very similar, or the predecessor to your Windows operating system that you use today, it's just, they might have had a little bit different of a format. Compared to the text-based, DOS-based stuff that a lot of people had to use, OS2 was awesome. That's why I call it just such a fun thing to work with. Then they went from OS2 to OS2 Warped. There was just a little variation on it. Eventually it just kind of took the back burner and Windows started really kicking in where you had Windows for Work Groups. You had regular Windows and you had Windows for Work Groups and Windows for Work Groups was the first time they actually truly implemented some networking into the Windows operating system. Then we've, our initial foray into the networking was with Windows NT 3.5.0. That was the very first Windows networking operating system we ran on a server. We purchased this very expensive Alpha server, which you wouldn't even find nowadays, but that thing was very powerful for the time. We ran that and we just started creating accounts, and started having people connect to the computers, share files, and share printers, from there. Then we upgraded to version 3.5.1, 4.0; from 4.0 to 2000; and 2000 to 2003. The years don't always match with when... People say, "Ohh, that doesn't make sense." But sometimes Microsoft's a little behind on their years as far as when they're actually releasing things.

LF
You feel, or you imply that Naugatuck Valley was on the cutting edge in terms of keeping the pace with the development of these operating systems. How about the people? Was it hard, was it easy, to get people on the bandwagon so to speak, with using computers, and converting from paper and pencil and all the old fashioned ways of doing things, the old card catalog and everything in the library, into technology?

BA

You had various people with various levels of experience. Some of them embraced it wholeheartedly and just loved it. Then some of them didn't want to know anything about it. They actually had a choice for a while to kind of stay off the network, they didn't have to really worry about it initially. It was the people that wanted to get on the network that we worked with first. The people that felt they had a need, that's the ones we wanted to work with because they're going to learn the most and they're also going to want to, they're just going to want to experience it more, and they're not going to be, "Oh, I don't really wanna to do this." We had some people that were just totally against the technology, and then others that fully embraced it. Joan Donald, she loved the technology. She was one that, she could remember going from printing out cards one way to this new, oh on a nice new printer, laser printer, she loved everything like that. She was always one that, "Sure, show me it, I'm more than happy to learn." There were some people though that, "Teach me only what I need, and that's it, don't show me any more. That's it." Some people would want to attend classes and some people would stray away from classes. Judy McCarroll was one that she always tried to offer classes on the various things that were going on.

LF
I think when I came here you could even choose whether you wanted a Macintosh or a PC. You want to talk a little bit about the carryover to PC?

BA
Initially when I first came here it was just mainly PC, there was a few Macintoshes, older Macintoshes, these Apple II Cs. The Math/Science was the heavy users of the Apple Macintosh computers. Then the Arts & Humanities initially had some Apple Macintosh computers actually some Macintosh Centris 610s and stuff like that they were using for teaching people writing. Eventually it came down to the Macintoshes became more difficult to support when it came to the networking side of it. Macintosh computers are very easy for the *users* to use, but when it comes to supporting a network, securing things, they weren't as easy to integrate into the system. So a lot of people started shying away from the Macintosh computers because, also the applications that we were running at the time just weren't supported under Macintosh. If it was just word processing that's one thing but when it comes to MARKOS, the student record system, they didn't want to support that on a Macintosh computer. But on a PC, fine. You can run a Windows terminal emulator, you could support the student information system fine on a PC, but Macintoshes just didn't really emulate that well as far as the printing and some of the other functionality. So that's why we probably had more people eventually start shying away from that. Then the cost. Macintosh computers were always more expensive than PCs. And then as far as repairing them, it was always more expensive to repair a Macintosh. So that's part of the reason. We probably pushed more towards a PC because we saw more capability for us to be able to support it. With the Macintoshes there wasn't as much configuration that a person could do to it. It's just out of the box, it's going to work, but you're not going to be able to configure it like you could a Windows machine, trick out a lot of things, and do a lot of capability. We still have some Macintosh today but they're newer. We still have some of those old computers that are barely even able to support the network at all. Then we have some that are newer that are more … the new

Macintosh computers use a new operating system that's more like Linux. Because of that it's more Windows-oriented and capable of interconnecting. So I'd rather see the new Macintosh out than the older ones that were yesteryear.

LF
Is there anything today that feels like it did back then when you were on the cutting edge? Any technology that is just starting to be introduced that has the same kind of feeling about it as the next big thing?

BA
Probably the next big thing that we're going to get into …

(Track 4 begins)

BA
… is the Voiceover IP, and that's where we're going to actually have our telephones going over the regular network. Instead of having a telephone switch, right now, that can support maybe six or seven hundred users, a Voiceover IP could support a lot more, but it also allows you to move much more easily. You won't have to hire a telephone guy. Every time you want to move from this room to another room with the telephone? You'll just go plug your phone into another jack somewhere else. The catch is, you have to have a very reliable network, you have to have newer equipment that can support the quality of service for something like that. So the Voiceover IP is going to be one of the cutting edge technologies that we are migrating to. Actually we're just kind of waiting on the money; it's out there already, it's just a lot of people haven't adopted it because either they're afraid or they don't have the money to switch over. But our telephone system's quite old and it could hiccup any day and what do we do, then we're going to be forced to switch over to that at that point. A lot - - I won't say a lot - - there are some colleges that are already ahead of us on that. Manchester, they're already ahead of us in some areas as far as communications. Tunxis switched over to Voiceover IP. The System Data Center is using Voiceover IP, and Capital I know is using Voiceover IP. A lot of the other colleges are exploring it but we might be a little bit further along as far as we've done some research into it. We've already kind of decided what we want to purchase, we're just kind of waiting on the money to become available. We need to do some upgrades to the networking equipment. Wiring-wise though, we've been wiring with the Voiceover IP in mind, as far as doing CAT6 cabling, trying to put in enough drops, network drops to support that type of infrastructure. Some of the other things you're going to see more is like the security cameras are going to become more, especially on our campus, are going to be going through the regular network, that type of stuff. Eventually your t.v. type stuff, your public displays that we have in the hallways? are currently run through an old-type cable system. That is something that our long-term goal within the next couple of years is to switch that to run over the network as well. The nice thing about that is then moving things around is going to make it a lot easier. You don't have to run a cable a thousand feet down a hallway it'll be, plug it into the jack and just configure the jack a little differently and you're up and running.

LF
How does bandwidth tie in with that? We already sometimes experience what I refer to in my naive way as bandwidth problems.

BA
The bandwidth problems that we experience though are really going between here and Hartford. Actually on the local campus our bandwidth doesn't even get touched half the time. We have plenty of bandwidth available internally on campus. The fact that when we send email, do Internet surfing, have students downloading music that they shouldn't be doing sometimes, that's all chewing up the network bandwidth between here and Hartford. Now when I first came here we were on something called frame relay. Very slow - it was probably like 256K, as far as the speed. Then we upgraded to what was called a T1. A T1 was like 1.4MB, so that's like a floppy. You're transferring a floppy worth of information per second. Now we're on something called an OC3 but we're only on a fraction of that so we have 5 MB but 5 MB in reality is a very small amount for the amount of information that we try to transfer between here and Hartford because our student information system, which is Banner now, is all graphical in nature. All that information has to transfer from here up to Hartford, as well as e-mail. Our e-mail system, all the e-mail's actually stored up in Hartford. So all that's got to go back and forth over that, so when people say, "Oh, everything's slow!" it's probably usually because that connection is slow, and we do some things to try to shape it a little bit so it's not as bad. We have a piece of equipment that's running at all times, and if it wasn't running? you'd be screaming all the time at that point. Instead, right now, it's just every once in a while people say, "Oh." We even have Vista, which is what the students, you know, the Vista/WebCT? All the students are using that going from here up to not so much Hartford but Charter Oak which is the CTDLC-type thing, so hopefully that cleared that up.

LF
Okay, so historically we're still where Kinney's being built, you're seeing the temporary buildings get hit by lighting…Let's fill in the years in between. A little bit about how you saw, for instance, I notice in the IT department, what's now called IT, very little coming and going. People get hired, they stay. Do you attribute that to teamwork, a camaraderie amongst people in that field? Or just in general, or specific to our campus, what?

BA
I think the IT department works very closely with one another and the reason I think we do that very well in comparison to some other places is we have students that work with us for two, three years, as long as they can they're working in the IT department as student helpers. Then sometimes they'll go find jobs at other colleges or other places and they say, they come back and say, "I can't believe how close you guys work together," in comparison to where, because they say, most places they go to there's very segmented departments and they just don't work well with one another. Whereas, in my opinion our IT department has always tried to work very well with one another. We try to communicate to each other, "Okay this is what's going on." We try to help one another, we try to cross-train some; there's obviously some things we just can't cross-train on

Like Debbie, she knows her things and there's only one other person that knows some of that and that's it. The rest of us just don't have time to get into her area, but at least we have someone that has a little bit of the knowledge there.

LF
What do you attribute that to, that group effort?

BA
I think the previous, Judy McCarroll use to try to make people work together. I think everyone respected her enough that they would. When I initially started it was really just Debbie, Judy, and I, in the IT department. Then there was a couple students, occasionally. Then we ended up getting a secretary and that helped out with some functions. Eventually we hired another tech, actually, as far as my job was primarily a technician but I've always been in the networking role in one way or another since I've been here. So I didn't really officially have the title of Network Manager until many, many years later. Jennie Beetz came in around '94, '95, and she was actually the network manager, and she maintained the accounts and she did a lot but I ended up doing more of the hardware end of that. I've always done more of the design of the network, I've always been involved with troubleshooting any network hardware problems. A lot of places hire that out and I just can't see us ever wanting to do that if we can avoid it. As far as printers, we've always wanted to repair our own printers. A lot of places will hire all of that out. Occasionally we just don't have the time or the manpower, we might do something like that. But overall we've always tried to do our own thing in-house, and in so doing we've always saved the college money because if we repair it it's a lot less money than if we hire some outside company to do a repair for four or five hundred dollars when we can do it for just the cost of the parts and a little bit of our time. So the college is getting its money's worth that way.

LF
Plus you keep up to date on how things work.

BA
Yeah, and Wayne has always been a strong advocate of repairing our printers and I've always tried to do that myself when I was a tech as well. We've always tried to repair our own computers. The only time we'll have Dell or someone come in and repair our computers if it's under warrantee and they're forcing our hand on that. If they say, "We want to send someone out." We'll say "If that's what you want, fine." But we have the knowledge to do this. When it comes to servers, we generally will let them repair some things on the servers.

(Track 4 ends)

(Track 5 begins)

BA

Other things I generally would get involved with are, I've traditionally had some student help to help me out. We've had some very talented students come through. It takes time for them to learn but some of them have been very talented and have gone on to really pursue great jobs out there, careers.

LF
I just wanted to fill in that gap between when things were just beginning to come together and now, when it seems so seamless, you know you walk into a computer lab, the library, you turn on the computer, everything just runs. So I'm sure there were a lot of difficulties getting to that point.

BA
Yeah, it took time to figure out how we were going to have people report their problems. Now we have the Help Desk, and actually we're going to have a new Help Desk coming out soon that'll hopefully even improve upon that. Judy McCarroll took the time to write a Help Desk years ago that people submit, "Okay there's a computer broken." We try to respond as quickly as we can, but we use a Help Desk to know when to install software. When I initially came here we had everyone leaving messages on the phone or trying to get a hold of a live body. If you got a hold of us and we were short-staffed we would deal with problems as they came, but with the Help Desk, that allowed us to prioritize a lot of things and to see a bigger picture, 'cause with the Help Desk we were actually able to run reports, and see "Okay, who submitted the most Help Desks? What are our major problems been?" It's allowed us to respond I think a lot quicker. Also I think most people have been willing to work with that. It took a little bit of time but people gradually started submitting more Help Desks for various issues. We run some software in the computer labs that we've changed over the years. Initially when we had computers running we ran something called DACS. It was a security system that prevented changes to the hard drive in the students' labs. So if they wanted to format the drive they could format it, or they would think, but you reboot the computer it'd be back to normal. Very similar to DeepFreeze, just a different company that made it. It was a little bit more complicated to deal with and wasn't as friendly. You had to go around to each machine to actually do this. The network has probably allowed us to deal with more computers. Originally, what you've got to remember is like in '93, '94 timeframe we didn't have that much of the network going. We had to do something called SneakerNet. It's where you go from this computer to the next computer to the next computer to actually install the pieces of software; you had to do it on each machine. Now with the student lab we install the software on one machine and then we do something called ghosting.

LF
Hold on one second.

BA
I think I was talking about the DeepFreeze, and also something called Ghost. Ghost is a program that allows us to take one computer and copy that image to all the other computers. The only catch is the computers have to be similar hardware. So one of the decisions early on, was when we purchased computers for computer labs we always

wanted to make the hardware identical within the lab. By doing that we could then image the software to speed up the process of allowing us to deploy software throughout the college. The DeepFreeze, by installing that on the computer after it's been imaged, allowed us not to have to worry about someone accidentally deleting the files on the computer and also making changes. Before we had security software it wasn't uncommon to have people change the color of the display to black on black or something like that where you just basically couldn't do anything with the computers sometimes so you had to start over.

LF
A practical joke?

BA
Or just inadvertently. We used to have it done both ways. Some people do it by accident and then we had the malicious users that would do it on purpose. We also used to be more vulnerable to the viruses before the security software was installed. The DeepFreeze has helped us in that respect. The other things that we use to help us maintain such a large amount of computers is just the fact that the network allows us to transfer larger amounts of information and install the software remotely sometimes. If I want to go help someone over in Kinney Hall, I don't necessarily have to walk over to Kinney Hall. I can take control of their computer through the network and install the software, or just help them figure out little basic things. So that technology has been great as far as I used to have to walk everywhere for everything. I guess I got more exercise that way (laughs). That was okay. But I saved some time by not having to travel as far so I could do more work, so you become more productive in that manner.

LF
Did the expansion of the campus and the merger - - how did that effect what you did, or what IT was accomplishing in those early years?

BA
Initially, before the campus merged, or was in the process of merging, Mattatuck kind of maintained their own computer system. Once it was more of a merged college, which was probably more the time I got hired full time, that's when we started taking on the additional responsibility of having to maintain the Business Division labs and they had already done some of their own stuff with Novell networking. So we had to kind of undo some of that and convert it to our standards because they had already done their own thing. They had hired an outside company to come in and do all their wiring, and we ended up having to redo the wiring, redo all kinds of things. So it created a little bit more work there. But by merging the campus it also created more of a need to expand the IT department. It was no longer just … Waterbury State Tech was a much smaller institution. So to maintain the amount of - - we only had probably four computer labs in Waterbury State Tech initially, that I remember. But Mattatuck had probably four computer four or five computer labs as well so we just doubled the size of what we were maintaining. Because it was SneakerNet initially on a lot of stuff it took a lot more time so we had to grow the staff. So we relied heavily over the years on a lot of student help,

and we always have. I think it's good because the students that come through gain a large amount of experience because they have to deal with all kinds of problems. We try to show them a lot of stuff but some of the stuff they have to just learn on their own as well. Sometimes we've never even seen the problem so we'll just say, "Okay what's happening?" We try to draw correlations to what's happened before, with various problems and see if we can troubleshoot it that way but because of the merger we had to expand the department quite a bit. It was a gradual thing but we just relied very heavily on student help. We had some really good student help over the years and we had some that, well, it left a little bit to be desired. They come and go but the ones that really worked out well, a lot of them went on to find really nice jobs. Some didn't really want to leave, or they ended up leaving just because we didn't have positions available, so they'd find better work. I think anyone that's been hired at the college generally wanted to stay because it's just been a really good environment to work in. One of the advantages of working in a community college system is, because we don't have as large of a staff you get to do a wider variety of duties. Some of the things that I do, I maintain the PC Tab security alarm system. I'm the Network Manager but I'm also doing that. I also do some tech work around the college, not that much but if there's no technicians availablebecause someone's out or whatever, we do what we can to help out. Our first thing is to help out people. If they come to the office saying, "I need help!" we're not going to …

LF
I would imagine they stop you in the hall sometimes too.

BA
Oh yes, quite a few stop us in the hall! That happens. We try to …

(Track 5 ends)

(Track 6 begins)

BA
… encourage people to submit the Help Desk and we'll work on it, and we can better prioritize but it always happens. The Nursing Division, cause they're right up there on the same floor as us, it's not uncommon for them to walk down the hallway and say, "Oh, can you help me with such-and-such?" "Did you submit a Help Desk?"

LF
It occurred to me that I have never, and I don't think anybody in the library would be able to say that they had ever, had to wait, or have gotten a rude response. You obviously are all overburdened but you're always… Do you get training in customer relations or are you just all just really nice people?

BA
We just try to be nice people. No, no one trains us in the customer relations, but part of our job is to help the users out there, that's the whole purpose. Why do we have a job otherwise? We try to help out people, we try to be pleasant, what's the sense in not?

Sometimes people have bad days, it's going to happen. That happens to the best of us. You've probably been lucky! But I think overall we've always tried to be positive and help people out as much as we can. I think the staff overall just wants to be helpful.

LF
With the advent of most people, most students coming to college now having computers, what direction do you see for IT, and what about yourself? You've pretty much spent your career here. How do you see the future 5, 10 years down?

BA
I see students becoming more knowledgeable. I think some of them are going to surpass me in areas; there's probably some that are well-surpassed me as far as knowledge in certain areas. As far as the networking, networking's going to just get faster. Hopefully easier, more management as far as inventory-type stuff, as far as controlling it and helping fix things automatically, self-healing type stuff; there's going to be more of a need for security. It's actually supposed to be in place now but due to money situations it's not really there where it should be.

LF
Security in terms of theft? or actual activities?

BA
More activity-type stuff. An example is the wireless down in the library is technically supposed to be secured in a different manner as far as, general public shouldn't be able to just log in without an account. So that's where there's going to be some changes eventually. Where everyone will be required to have an account, and based on that account you're going to have different permissions. If you're a public patron you'll only have access to the Internet only. If you're a student at the college using a college computer you'll have access to anything that a student would have normally. However, say you brought in a personal laptop. Right now that's not allowed on our network. However, is it possible to hook one up? Ye-e-s…

LF
I say no-o-o to patrons who ask.

BA
Well that's the correct response, because the only place that the personal laptops is allowed is actually on the wireless network that's down in the library area, because that's on a separate network connection. Eventually that's going to go away though. They don't really want this separate wireless; they want the wireless to integrate with our network and to have security mechanisms in place that if a person brought in their personal laptop they could still use our system but they're going to have to still log in with an account, and right now you guys are probably the only, or one of the few colleges that are actually issuing out community accounts and allowing students to log on to the machines. But they want to see everyone that uses a computer at the colleges to have some type of authentication. It's for liability purposes too, because if someone does something that

they shouldn't, if they're not logging in you have no accountability. Also the reason why you want to prevent a personal laptop from going on to our normal network, not the wireless one that's connected to the DSL, is because of viruses; those types of threats. If someone wanted to do something malicious with a personal laptop, how are you going to know who they are, where they're coming from, if you're not controlling that? So that's one of the things that will be changing within the next year to two years. We've been looking into some things, it's just all about money, unfortunately, getting the sufficient funds to do something like that.

LF
It occurs to me that you've probably been tagged as a Success Story…have you been a Success Story? They've had this program/campaign using students who have gone on to successful careers as examples of what can be done here at the college, and I think you would fall into that category. Except that your success is still at the college! It seems like you've enjoyed your time here and been able to develop a lot of knowledge and skill.

BA
I'd like to think that I could be considered a Success Story and I really would like to continue working at the college. As far as what my avenues are going on, unless I become a director I really don't have any mobility at the college, however I do like hands-on. Being network manager I've always had the ability to do a lot of hands-on because we don't hire out someone to install a network switch, we want do it ourself because if something goes wrong I can fix it much easier if I knew how to install it, as opposed to, "Okay, let's call XYZ Company and have them fix it two days from now." That wouldn't fly very well. I think our users at the campus are accustomed to us trying to fix things very rapidly, because we try to maintain our knowledge and keep current. But I always have enjoyed working at the college because of the people involved and the fact that I get exposed to so many different new technologies. Years ago, a couple of years back, we switched to the Active Directory and that's where we went from NT4, where we were mainly assigning accounts, when we went to Active Directory we started having the accounts automatically assigned by the program called MIIS; it's basically something that automatically creates an account for any faculty or staff member, as long as they've been properly entered by HR, and the student people as far as Banner, it gets properly entered into core CT and Banner accounts automatically get created for staff and faculty and because students register for classes their accounts get automatically created. But just two years ago we had to do all the staff and faculty accounts by hand; it was kind of a challenge there, with people coming and going - we have a lot of adjuncts that teach at the college - it's a challenge, there's still a lot of room for improvement in that areas as far as how it could automatically add people to email distribution lists, and stuff like that; that in time I think will come, where it's going to be more automated and actually work out even better than it is now.

But I like the fact that the accounts are created and I'm just left in the role of troubleshooting: okay if it doesn't work let's figure out why not. That's a little bit better. The fact that all the students have accounts now is because of the MIIS system that's in place up in Hartford. I think that's great because now we have a little bit more

accountability, which goes back to that security thing, as far as "Who's using our computers?" It's not that we want to track what the students are doing. It's that if something goes wrong we need to find out where it's happening. We need to have a recourse at that point. When you have a totally open network where anyone can just log in you'd have a lot of problems if it came down to the federal government showed up at the door saying, "Someone just hacked our FBI system," or something like that. If you say, "Well, we have no clue," they're going to really scrutinize you a little bit heavier than if you can say, "That IP address is tied to XYZ user and let's go talk to that person!"

(Track 6 ends)

(Track 7 begins)

BA

Or if you get a warrant … it's just accountability is what I think is going to ultimately more happen. If people know there's accountability they're going to be less likely to do things that are bad for the network. We've had people try to download all kinds of things over the network that just, you say, "Oh, things are slow," it's because you're downloading things you shouldn't. Some people don't understand there is ramifications. I've actually went into computer labs because anytime someone does something that's downloading a lot of information and it causes a jam for everyone else, Hartford will then send a report down to us and say, "Can you go investigate it?" We'll be provided an IP address and I have to narrow that down to where it's actually coming from on the campus. Because of the staff we that we have in the IT Department, Nick Schweitzer created a network search thing that's totally awesome as far as being able to track down this IP address to this room. I'll actually know what room, what computer it's coming from. So I can actually go to that room and say, "Excuse me, can we talk?" Some people just don't realize what they're doing is wrong, and then we have some people that don't care. So there're those situations. Most of them just didn't have a clue they were affecting everybody that way and they're very apologetic. We just say, "Please don't do it again," and we let them go on their merry way, generally. And it usually doesn't recur, from that person at least.

LF

I was thinking maybe our final question… I know you have two little ones at home? What do you see for them down the road, in terms of technology.

BA

I have a three year old, that's Matthew, he's already saying, "Oh I want to play on the computer," but he can't read so kind of a little bit of a challenge for him. But my five year old, he's already playing on the computer like you can't believe. No fear at all. I think kids nowadays don't really have the fear of computers whereas the older generation is kind of like, "Umm, I don't know…I don't know what to do." They're afraid of it. They're afraid that they're going to hurt something. Whereas the three and five year old, and I have a step-daughter who's ten: no fear.

LF
It's intuitive to them.

BA
Yeah, they just click here, click here. They'll learn things faster than we do because they're growing up with it so they just pick it up quicker. My son may not be able to read but he can sure interpret enough from what's going on to know, "Oh, if I click here it's going to open this program; if I click here it's going to close this program." He knows enough of that. He loves playing on the computer. I think technology-wise they're going to just be, full embrace of technology whereas my grandparents would be like "Ahh! Get away."

LF
So you'll be encouraging them.

BA
I will but I'm always going to be apprehensive as far as the on-line stuff, I think there's a lot of dangers there. I have locked down the computers to where they can go. I feel kids should be supervised when they're using computers because there are a lot of dangers as far as if they're using chat programs, who they're communicating with; you don't know. I have concerns there, but as far as using the technology I think they're going to do a great job. They're going to have no reservations. They'll probably be typing before you know it. I'm sure they're going to have typing, keyboarding skills available for them whereas I took the old typing back in high school.

LF
Hunt and peck method?

BA
I did learn how to type in high school. But a lot of people I see are still out there pecking. But they get by. I can foresee my kids will know how to type at a relatively early age. I would be apprehensive to let them be on there by themselves without some supervision or some controls in place. The Internet's a great place but you have to also know what's safe and what's not.

LF
Just like any community.

BA
Yes.

LF
I thank you very much, Bruce, for talking with us today. We'll sign off now.

(Track 7 ends)
(Interview ends)