

An Interview with
BEVERLY SHERMAN
OH 474

Conducted by Jeffrey R. Yost

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Abstract

With support from the National Science Foundation (Grant No. 0811988, “Designing and Using FastLane: Distilling Lessons for Cyberinfrastructures”) CBI researchers Jeffrey Yost and Thomas Misa conducted oral history interviews with 70 NSF staff members as well as numerous additional interviews during 29 university site visits. An overview of the project is available at <www.cbi.umn.edu/oh/fastlane/> and a complete set of 643 publicly available interviews is at <dx.doi.org/10.13020/D6RG6B>. Here on the CBI oral history database is a selection of notable NSF staff including Joseph F. Burt, Jean Feldman, C. Suzanne Iacono, Constance McLindon, Carolyn L. Miller, Paul Morris, Andrea T. Norris, Erika Rissi, Craig Robinson, Mary F. Santonastasso, Rich Schneider, Frank P. Scioli, Beverly Sherman, George Strawn, and Frederic J. Wendling. Topics common to many of the interviews include the design and development of the NSF’s FastLane computer system, interactions with users, e-government initiatives, grants management practices, peer review, and NSF policies and practices. These interviews span a wide range of NSF staff, from program officers to senior managers.

Beverly Sherman was one of the lead training staff for FastLane who visited many universities around the country during the launch of FastLane.

Yost: My name is Jeffrey Yost. I'm here today with Beverly Sherman. It's April 2, 2009. Beverly, could you begin by talking a bit about your education? Where did you go to school, what did you major in in college?

Sherman: My friends call me Bev. I grew up in western Massachusetts and went first to what was called North Adams State College. It is now called Massachusetts College of Liberal Arts. I was in a special science-math class which helped convert an original teachers college into a liberal arts college. I was on a scholarship majoring in chemistry and physics. Then after two-and-a-half years there I ran out of money and followed my husband around the world. He was a naval officer. During that time I was able to get my bachelor's degree at George Washington University. They had a special program for women around the beltway. We were living in the Northern Virginia area. Then when we moved to the Norfolk and Virginia Beach area I was able to take night courses at George Washington University. When we moved right back within nine months to this area, I was able to finish up. I always thank God I was in the area long enough with one school, to finish up. Afterward I wanted a master's degree and I had two girls to put through college. My son had a Naval ROTC scholarship to Marquette but my girls didn't. I wanted them to go to good schools because we moved so much. I went to Rutgers University in Camden and took many courses in physics and computer programming so I could go on to a master's in information systems. I just kept working and working and never did get the master's degree. I did get my two girls through Skidmore and Vassar and they're doing well, as is my son.

Yost: In 1982 you began working at NAVRESSO, the Navy commissary and exchange system. Can you tell me a little bit about that position?

Sherman: Yes. I started working in their information systems division. My task was to put in desktop computers at headquarters and at all locations. They did not have any at the time. Everything was connected to a minicomputer as a network. In the 1980s, all these desktops were coming out-- something new. They wanted to put them across the commissary exchange system, plus headquarters. They thought this would be a perfect project for me, and it was. So I did that. Besides programming in FORTRAN for special applications they wanted, I also supervised programmers and installed hardware when it arrived. I spoke with IBM and everyone else when something wasn't going right.

Everyone was very responsive and I'm a schmoozer. I was able to get things done. It was interesting, just working there. One time, one of their divisions had something to do with computers on ships and they have eight-inch diskettes. I told those involved that as soon as that ship leaves harbor the computer was going to crash. As soon as the ship left harbor — like two feet — the computer crashed. Then they said, 'Well, maybe we should have listened to you.' And they started getting more up-to-date equipment but it took a while. Even on the submarines I went on and looked, they had old technology, which was really a shame.

Yost: In 1986 you began working as a contractor. Was that IT related, as well?

Sherman: Oh, definitely. My husband was assigned as Commanding Officer to a large facility in Guam and we were going to be there two years. My youngest was 13, she came too. My other daughter was in her last year at Skidmore. She asked me, 'Am I going to graduate from University of Guam?' I said, 'No, you're going to finish up at Skidmore.' My son was in the Navy as a pilot stationed in Cubi Point in the Philippines. They all came and lived with us on Guam. But, like everything else, I could not find a job within the U.S. government on Guam. So, in order to have something on a resume for those two years, I started working as a private contractor. I did it first for the Navy Exchange system on Guam. Then at a cocktail party, which we were going to all the time, I met the owner of a cable TV system. He said, 'Oh please, come work for us.' Which I did. And I did some other projects there too, for other people. Then I was invited by the middle school that my daughter went to, to teach a computer course. So I bought, with their money, some desktops for them to get something started so the kids could get some idea of what the future would be. I met a lot of people there. (Laughs.) And the governor was so impressed with what I'd done he gave me the Honorary Chamorro Award when I left the island. Not many women — wives — get that.

Yost: In 1988 you began working for the Department of the Army Information Management. Can you discuss your role?

Sherman: Yes. I was located in the basement of the Pentagon and was tasked to interview each Department of the Army; Subdepartment of the Army in the Pentagon, to learn what each was doing for their Information Management Plan. 'What do you have

now?’ ‘What do you plan to have in two years?’ ‘What do you plan to have in five years?’ What I also did was draw a diagram of what they had, which had never been done before, because people could understand what was going on more easily. Many were not very IT savvy at that time. I received an award for that. I was also on a special committee to find out what to do about hackers. Someone had broken into a secret server. We found out later that he had hopped around and bounced around and finally entered the server. The way they found him was that he had bounced in somewhere in California and then got into their server, somehow. No one had ever thought before then, of putting firewalls up or anything to keep out people who don't belong there. I had full access. I could go into it. It did not have any secret information like wartime stuff. What it had mostly was personnel files of the officers. That really is sensitive. It's no one's business. So we recommended things. However, it was frustrating to get those recommendations implemented because, at that time, Congress had not had any penalties — there were absolutely no penalties for breaking into government computers or anyone else's computers. In other words, ‘If you do this, this is what's going to happen to you.’ Fortunately now there are penalties if you break into federal computers. But it was all very interesting.

Yost: Was the Department of the Army using primarily contractors?

Sherman: Not when I was there. All the people I worked with were either federal employees or active duty military.

Yost: They did their own programming?

Sherman: They did all the programming on all the servers they had — everything was on servers. Even though I had a desktop, all the desktops were connected to a server. I was in the basement, which was very interesting too, because there were some places in the basement that were very sophisticated and other places in the basement had dirt floors. The Army never had enough money to get us equipment so we were always raiding the castoffs of the Air Force because they always had more money and we would look to see what did they discard today, can we use it? But it was a nice group to work with. Then I was offered a job by a Colonel in Information Systems for Army Intelligence.

Yost: That was in the Pentagon?

Sherman: That was in the Pentagon, on the second floor.

Yost: Can you discuss what you did there?

Sherman: I have put down what I did. I supervised people and I supervised a program — a big bunch of money — for communications centers across the world. It was very interesting, especially during 1990 during Desert Storm when US troops went into Kuwait. There are other projects that I can't talk about and found extremely interesting, too. I even volunteered to go over there, but they said no, they had enough people. My family said, 'Good.' But it was extremely interesting, the things that we learned from

there. I also had a center that was in Stuttgart and we had a meeting there in December 1990. Then we drove through the former eastern part of Germany to another meeting in Berlin. Berlin in December 1990 was extremely interesting.

Yost: Can you tell me how you came to the NSF in 1992?

Sherman: Yes. I was not looking for a job but my supervisor had just retired from the Army and he said, 'Oh, Bev, this would be a good one for you. It's policy officer at National Science Foundation.' I said, 'Oh, I don't want any part of that.' 'No,' he said, 'You would really be good because promotions here are very hard to come by.' I was a GM-13 at the time, and they were very hard to come by. So I applied for it and I received the position. That's when NSF was on G Street in the District.

Yost: And that was IT Systems Policy Office?

Sherman: IT Systems Policy Officer.

Yost: Describe IT infrastructure at NSF when you arrived.

Sherman: When I arrived I had a desktop computer which was all hooked into a minicomputer system. They had a minicomputer and a mainframe computer, and that was it. We had to log into a computer when we came in and when we left. Everything was geared to mainframes and minis and, of course, everything was paper for proposals. I was

never involved in any of that until I got over into this building and into that position with FastLane.

Yost: Those were HP minicomputers?

Sherman: Yes. They were Hewlett Packard. I want to say one of them was IBM but I don't remember. Fred Wendling probably remembers; he was more involved with that than I was.

Yost: Do you have a sense of what people at NSF were using computers for at the time, just for word processing?

Sherman: The laugh of it; they didn't have much memory. You have more memory now in your desktops than those minis ever did, and they took up so much space. They finally got rid of them and you can see most of the area that I showed you, the Help Desk, a good two-thirds of that area — in fact, that whole area — was taken up by the mainframes and minis. And the room next to it on the left is where we have our servers now. Some servers are offsite but the majority of them are to the left.

Yost: You designed a conference room scheduling system. Can you talk about that?

Sherman: They had — this is years ago — a system and they needed it. It was really archaic and not suiting their needs and they had wanted it updated. So I did design

screens for that and then I was doing some programming but they had a contractor come and do the programming afterward. That worked out much better.

Yost: You developed and wrote NSF's five year IT policy plan.

Sherman: Yes. I had done this for the Department of the Army for two years. I thought it would be very similar but NSF didn't do it every year. The Army did it every year so that you could see where we were last year and where we are in our plan this year.

Everyone could easily see and understand the changes in the diagrams that I made. But the NSF plan was a different context entirely. It was all verbal, what they were going to do. I had Glen Larsen, who is still in engineering, working with me; and this other fellow — I can see his face but I can't remember his name. Fred Wendling probably remembers his name. He had come to NSF from the supercomputer center at the University of Illinois Urbana-Champaign and he was a new government employee. He was on my team too. The three of us met often and discussed what should make up the report. I wrote everything up. I stated that the future of IT was with Mosaic and the World Wide Web. My supervisor said to take that out as he had never heard of either Mosaic or the World Wide Web. But we refused. Fred never complained at all. It was sent up further, people saw it, and they made a proposal that maybe now would be a good time to create a proposal submission system. It seems that in the late '80s NSF had tried to create an online proposal submission system but the time wasn't right, the technology wasn't right for it. Fred probably knows more about that because I wasn't here then. But I was told that Jerry Stuck had been in charge of that early project.

Yost: That was the EXPRES project?

Sherman: It must be; I don't know anything about it.

Yost: What year was the five year IT policy plan completed?

Sherman: That had to be in '93. We came to Ballston [Arlington] in '93. It had to be '93 or the beginning of '94. I was trying to find that in my files and I wasn't able to. If I find it I'll mail it to you. Once the three of us signed the plan it was gone. Neal Lane, the NSF Director at that time, was a wonderful man, very outgoing. When the idea was presented to him, he said he wanted to do it. He thought the idea was wonderful. He didn't like the name FastLane because his last name was Lane, but he thought it was really the way to go. He kept saying to me, 'I don't like that name.' (Laughs.) We couldn't think of any other name.

Yost: When you were IT Systems Policy Officer, can you give me an idea of what division that was under?

Sherman: It was all under the Division of Information Systems; I just stayed with that division.

Yost: And Connie McLindon was head of that division?

Sherman: Connie McLindon was not head of the division. She was head of the directorate. Remember, I showed you, and I pointed to the Directorate of Information Resource Management? She was in charge there. In fact, she designed the offices for herself. She was in charge there, and she was behind it too. Of course, she liked the idea because it wasn't her money that was paying for this; it was the director's money for this project for the first three years.

Yost: Can you discuss how the idea originated at NSF for an online grant submission system?

Sherman: They must have used their ideas that they had in EXPRES, or whatever it was called that they had before and just adapted them. I didn't get on the project until probably it was three months into it. I asked to get on the project. That was after this fellow, who was from University of Illinois supercomputer center, had left. He was in charge of the project. I don't know why he left. He left and Carolyn Miller was put in charge. She had Dan Hofherr, who was a student intern, to help her. I saw it and I asked Fred if I could be part of it.

Yost: And so did you report directly then to Connie McLindon?

Sherman: No. I reported to Carolyn Miller. We were both just GS-14s. But I did like working on it -- working designing screens, improving what they had, making it more

efficient to use, using fewer steps to login, fewer this, fewer that, more efficient. I like being more efficient on the screen layouts. The better screens you have the fewer calls you get, too. The easier the screen is to understand.

Yost: Can you discuss the earliest activities you engaged in, in the development of FastLane?

Sherman: One of the first things I was tasked to do was register institutions. I created a paper. They would send in their request, and sometimes it was correctly laid out, sometimes it wasn't. I would take it to a contract programmer to put it into the tables. Then it got so they wanted to use the contract programmers to do actual programming. I was told, 'You won't have any trouble doing this. Here's how you go into the tables.' So then I was typing the new institutions into the tables, registering the new institutions so they could use FastLane to submit proposals.

Yost: Do you recall what contractors were used?

Sherman: The contractors were employed by Compuware and they were fabulous, really fabulous. I gave you the name of Rich Schneider, he's working here now, still as a contractor, over in the budget area, BFM, and he's still fabulous; very creative. I would bring him my ideas and I would even map out the screens I wanted. I would make it up and paste where I wanted everything on there and this is what I want. He would come up and say, 'You know, if you had this over here or this over here it might flow a little

better.' I like working with people like that--with better ideas so we would end up with a better product. He was super, Rich Schneider.

Yost: And he was with Compuware full time?

Sherman: He was with Compuware full time. Compuware was the only contractor that worked on FastLane, at the very beginning. It's only been in the last maybe five years that we had Booz Allen Hamilton doing new programs and maintenance. And Compuware was wonderful on maintenance, too. I could tell them, 'This isn't working, what's wrong here?' And they'd go in and they'd look and they'd fix it right away.

Yost: Do you recall in the early stages how many Compuware contractors were there working on the project?

Sherman: There was the person in charge of the group, Al Giannangeli, and there was a woman, Judy Ruttenberg, who was his assistant. Al and his wife own and run a wine shop in Gaithersburg, Maryland. He mentions his involvement with the development of FastLane on the company's website.

Yost: Do you recall that person's name?

Sherman: Al was first head of the project for Compuware. Next we had Paul Arnest. Paul is very smart and was nice to work with. There were other contractors that came

and went. Tom Willingham was the Compuware contractor who had something to do with the servers, and he was super. He was very cooperative and smart. He's the one who discovered, in '95, that someone from the University of Iowa had broken into the server. But they hadn't realized that they were on the demo server. Fortunately no harm was done. Tom showed where this fellow had gone. At that time all of the hackers were 18- to 25-year-old males. How we could tell it was the University of Iowa was by the IP number, and where he went all the way through. That's when we got the firewall inside and hacking software. It was really a blessing that this fellow did hack in because we hadn't thought of the possibility of people hacking in and doing damage. We were probably one of the first government agencies that had anti-hacking software — well maybe the Army did — but we had never thought of it earlier. We put it up. And after we started FastLane and people were happy using it, the more we used it.

Other agencies came and talked to us about FastLane. 'Oh, this is so nice; this is so nice.' Then they'd ask, 'How much did this cost?' and, of course, they would say right away, 'Oh, we can't do that.' They were still in the mainframe, mini frame mode.

Yost: Can you name some of those agencies? Do you recall?

Sherman: I don't remember them, no, but they would all come and they would all say the same thing, they didn't want to spend the money.

Yost: I understand there was an interagency group?

Sherman: That's something different, the interagency group, it was e-government and Craig Robinson was in charge of it. He had Rich Schneider make up a software proposal package for everyone to use, based on FastLane. They all could have used it. Only one was against it and that was Department of Education. I went there and did presentations on FastLane and how we used it and what it did. The majority of the questions were about how we used FastLane internally. Fortunately, I knew what we were doing there and I was able to answer them. They were very polite and showed me the door and never asked again. But that was very unfortunate because had they agreed to use Rich's program, had all the agencies agreed, we would not be in the muddle we are now with Grants.gov. The plus of Grants.gov is that it lists all the proposals of all the federal agencies. That's a plus. But it really cannot handle the traffic that it's getting. That was in the newspapers. We told them and they wouldn't even listen to us.

Yost: In the early stages of FastLane, what were the major challenges to overcome?

Sherman: Perhaps the biggest challenge was to have the users use it. The Director's Office created a special program for large colleges; 138 universities were eligible to apply. It was called the Director's Award for Large Colleges (DAL). That meant that there were two or three universities from each state that were invited to participate. It required abbreviated forms but they had the cover sheet, a project summary and a short project description. It wasn't like the regular proposals that we now have. It was a little abbreviated. I'm quite sure that from there a panel selected five. I think there were five

that ended up with a \$500,000 award. This was really nice. Of course I received a lot of calls. Some of them said, 'No way am I going to do it' and they didn't. They didn't participate. It was interesting to hear from the University of Kansas. They called me up and we talked and they were very enthusiastic about the solicitation and using FastLane. The fellow I spoke with said, 'Our people feel that this is the way of the future and we want to be leading the pack.' I said to myself, 'Hmm, sounds like what Neal Lane wanted.' They were very enthusiastic about it and they won. They were one of the winners. And those nice people put a copy of the winning proposal on their website so that other universities could see their proposal and use it to prepare their own proposals. And I said to myself, 'They are really good people. They didn't have to do that but they did.'

Yost: When you say they were the winner, they (pause)

Sherman: They won one of the \$500,000 awards. I'm sure the award was for \$500,000.

Yost: And it was the 138 schools that were eligible?

Sherman: 138 universities were eligible to apply but some of them chose not to. In fact a number of them did not have the equipment, web connectivity, or people who understood how to use the web. It was a whole new way to do business. I remember submitting a couple proposals for these universities. Either the internet was down or they had no connectivity.

Yost: Do you recall the date, roughly, that you came onto that FastLane project?

Sherman: I think I came on — I know it was in the fall and FastLane had been in operation for three months. I don't remember the year. Everything was blurred after that. Calls; phone calls; tons of phone calls, emails. As I would register the new institutions I also had an email list and I divided them into sections of the country so I wouldn't have a massive one. I thought it would be easier to do; do them in sections; but what I didn't realize is — and Craig was here then — every time we would update new features I would send everyone who registered an email saying this is the new feature on FastLane. I did that one time and they were so excited about it, I guess, they kept responding and they copied everyone. I had put all their email addresses in the 'To:' part. I should have had the email addresses in the bcc part. I learned. Well, they kept sending emails to everyone, bouncing back and — to us too, we were part of it — and it almost shut down our servers for our email. It came very close to shutting down our servers. We finally stopped the emails and from then on, it was blind carbon copies, and finally we stopped doing it. You try to be kind to let people know the latest, even though we put it on the website. We had not expected that. It almost killed our email system.

Yost: Can you tell me about the early discussions about how NSF would help people, schools, institutions adjust to this new grant submission system?

Sherman: We had — and we still do — twice a year regional grants conferences at different schools--in the fall and in the spring. FastLane was included so I attended the conferences to give workshops and presentations. I also went to NCURA and gave presentations there and I would have a booth there, too, for anyone who wanted to talk with me. I went to SRA conferences, gave presentations and workshops there, and was always available for anyone to talk to. And with SRA, their conferences, they always would have area tours, which I had to pay for. So I would always take the tours with my own money because I'd meet people and they would always tell me all their problems with FastLane. (Laughs.) Problem here, or a problem there, and I would say, 'No problem' and I would be writing them down. It was a good way for me to meet people. They knew me and trusted me. They would tell me problems they were having. And I would help them.

Yost: Were you the first person to give presentations to instruct FastLane at these meetings?

Sherman: Probably. I know Carolyn Miller had given some presentations, but I think I was the first with the hands-on workshops. They would have computers and people would be behind the computers and I would guide them along. I did the same thing here at NSF to educate the program officers in FastLane. In fact, they had part of what was called GPRA goals. Government — I don't know.

Yost: Government Performance Results Act?

Sherman: That's right. One year I had to give presentations about what we were doing to everyone in this whole Foundation. So we had a big one in our large room 375 — just as a presentation, no hands-on. Then I would go into the different directorates and give the same talk; and we got everyone. Craig said he was doing some after 9 o'clock at night just to get everyone checked off. I did that for a number of years, for all new employees. I was also involved with off-site project manager seminars. I would go there and give presentations on FastLane and then go as an extra for anyone asking about FastLane.

Yost: Moving back to the external, for a moment, do you recall when you first started giving presentations at meetings?

Sherman: I have all my travel records. I didn't throw them out and I saw some back to '96, '97. Sometimes two and three times a month I was going somewhere. I was at the airport frequently.

Yost: This was a combination of those major conferences but also to visit individual universities?

Sherman: One of the rules I would have is if I went to your school, I wanted every other school in the area to be invited too. Some of the schools did this; and some of the schools didn't, to my great dismay. I went to Puerto Rico a lot because I'm fluent in Spanish and so I would give bilingual presentations. There was another person here from the program

offices and EHR, the education directorate, John Cruickshank who would come with me; He's also very fluent in Spanish. The two of us would go to Puerto Rico and I would do the driving. One year, we did six universities in six days. That included St. Croix and St. Thomas in the Virgin Islands. The next day, I collapsed. (Laughs.) The rule in Puerto Rico was that anyone on the island could go to any of these workshops that we gave and they were wonderful about that. They just kept wanting us back because if they couldn't make this one, they could drive two hours and make another one. All the schools cooperated that way, letting other members of different schools come.

Yost: The schools in the U.S. that didn't invite other schools, did you get a sense of whether that was administrative oversight or that they saw some type of advantage of being more up on the system?

Sherman: I think secondly. They were rivals. They all had time to send something over to this other school and say, 'She's going to be here if you want to send people, you're welcome to.' One time, in September, I went to a different school every week and there was only one that invited other schools. I was really disappointed at that.

Yost: Were schools requesting that you make visits??

Sherman: Schools were requesting constantly. I'd have a whole line of requests and the money had to be approved and I would make up ahead of time how much it cost for me to go there. If it was approved, fine, and if it wasn't it wasn't. Only one time, I went to

Stanford University, and they paid my air and my hotel costs. We just felt afterward that it was too much trouble, IG-wise, to do — even though I'm squeaky clean, really tight with the money — they just didn't want to do that anymore. Schools would offer to pay to have me come, but we just said no. We can't do that.

Yost: What was the process for determining which requests you would take, which schools you would conduct the workshops at?

Sherman: It was mostly who requested, when they requested. Of course, the biggest priority was conferences because I could reach more people that way. I was very good at giving presentations. (Laughs.) I guess I just like to talk. It doesn't inhibit — some people in the group didn't want to go out because they didn't like giving presentations in front of all the people, let alone answering the questions. I never blew anyone off. If I couldn't answer the question I'd tell them, get their email and get back to them. It was always a challenge, but that's life. Life's a challenge.

I did the conferences; I knew I would be going to two regional grants conferences a year plus the SRA and then the NCURA. As the years went on, I didn't go to the NCURA because they really didn't need me anymore. And then if I was going to one area, one school, and some other schools had asked me previously and it wasn't going to be too much to go to these other schools, we would hop to others. I'd go to the other schools too. One time, I went to an SRA meeting in Palm Springs but San Diego State had asked me to give presentations so I asked if I could fly into San Diego for two nights, give

presentations at San Diego State one day and then drive up to Palm Springs and give presentations up at that conference, and they said okay. So I would do a lot of that, especially with schools that had called, I'd call them up and they would say, 'Oh yes, we'd love for you to come.'

Yost: Were requests coming more from major research universities or smaller schools?

Sherman: Everyone.

Yost: Was there any systematic effort to make sure that different types of schools were getting training?

Sherman: No. It was mostly who asked. I know one time, Yale asked me and I took the train, missed the train, and arrived in downtown New Haven at midnight. I don't like getting into a place at night. I usually get lost. (Laughs.) I took a taxi so I didn't have any trouble getting to the hotel. The next morning my contact at Yale picked me up and drove me to the university. The main reason for going to Yale was that they had asked me to go there several times. This time they had also invited me to their regional — think it was NCURA Conference in Boston. Representatives from all the universities in New England were there. They had questions, valid questions about Fastlane, and that went over very well. The Yale contact in their research office drove me up to Boston and everything worked out well. I took a taxi to Logan Airport and flew back. I know a lot about the airports. (Laughter.) I could write a book.

Yost: Did you give presentations at EPSCoR state schools and Historically Black Colleges and Universities?

Sherman: Oh yes. But not all the Historically Black invited me but I did go to Tuskegee two years ago. They had always asked me then all of a sudden EPSCoR said I could go. So I flew into Montgomery, AL, drove to Tuskegee. I stayed at the campus hotel and was there for two days giving workshops. It was very interesting there. They were all very nice to work with.

Yost: So there were EPSCoR funds at NSF and those were used for campus visits?

[interrupted]

Sherman: It all depended on who was in charge of EPSCoR because I went to North Dakota three different times. I went twice to Grand Forks, and once to Fargo. I went to Bismarck twice. I gave a conference for American Indian colleges one time in Bismarck. I encouraged them to apply to more programs and request more money so the students would stay in school in different programs. I went to other Indian colleges too. When I went to a regional grants conference in Albuquerque, New Mexico, I flew up to Durango (Colorado) where there was an American Indian school that had originally been an American Indian boarding school. And now it was a predominantly American Indian four year college. There was standing room only in the presentation room. They were very interested in getting funding. I said, 'Please, look at all these funding opportunities.' I

showed them opportunities on the website and how to use the NSF website to find funding opportunities. I told them, 'You've got to do this for the students.' The college had special challenges keeping those students in school, not that the students didn't want to stay in school, but their Indian traditions would keep them from attending classes. Their obligations to their tribes always came first. I was very impressed on how the faculty at that school and the other American Indian schools really cared about their young American Indian students and keeping them in school, I was really impressed with that.

Yost: Can you talk a bit about the content of these presentations?

Sherman: The content was the same all the way through. At first I would discuss the documents all the way through. At first I would discuss what they had to do before they went into FastLane; prepare the documents; read, read, read — because that's why most people don't get the awards, they don't read the requirements and so certain things are missing. How to find solicitations, and then, as the time went on, I broadened it to finding solicitations on the website. Really, when you get into FastLane all the work should be completed. You've read the solicitation. You know the requirements. You've prepared all the documents. So by the time you log into FastLane, all you have to do is start filling out the forms uploading the documents, and then forwarding the proposal to the sponsored research office. They review it and submit it. Done.

The other thing, not only to read, which I have in big letters 'READ' — it's a four-letter word, nasty word. Start early — that's another bad word — start early because many, I don't know if they are pressed for time or they think they are brilliant or they simply have too much other work to do, but some begin the proposal in the afternoon of the deadline.

At first we had a midnight deadline and now we have 5 p.m. We started out with a required submission time of 5PM Eastern time. We had one program that had local time. I went out to Montana State University right after that and Audrey Thurlow told me, 'Bev, that was so wonderful to have local time. It made the whole difference for us. We didn't have to get up at 6 o'clock in the morning, be here, and start working so we could have everything all together and out to you at your 5 PM Eastern time.' So I came back and spoke with Jean Feldman, the NSF Policy Officer. I said, 'How about we try it, on a trial basis 5 PM local time.' She said, 'Well, I don't know.' Finally she agreed that we could try it. I said, 'Really, California's three hours behind us. They're not going to get up at 1 o'clock in the morning — most of them, 99 percent will not — if someone does, they're nuts and they're welcome to do that.' So we tried it and it just worked so well that it's permanent -- local time. Hawaii was ecstatic because they had a six hours' difference. Alaska is four hours' difference. And it was so popular. It helped everyone and our servers.

Yost: Was there the opportunity to demonstrate FastLane up on the screen at these schools?

Sherman: Oh yes. Most of them would have overhead projectors so that I would be near the computer and it would go to a screen. Most of the presentations I did were at university's computer center. Then I would come here and do some videoconferences in this room. Those worked well when I didn't have any money to travel anywhere and they had the facilities and didn't mind doing this. I did teleconferences for some predominantly black colleges that were in North Carolina.

Yost: North Carolina A&T, and I suppose (pause)

Sherman: There was North Carolina State University in Wilmington. I did a videoconference and then I went to, for an NSF day in Greensboro. And I gave workshops there. Winston-Salem had kept pounding me, 'When are you going to be down here, Bev?' So I got a day extended so I could drive up to Winston-Salem, which is a predominantly black school, and I gave them workshops too. That was packed and I was really happy to have an extra day to help them. So if I could, I'd get an extra day. I knew many people who'd say, 'Oh Bev, if you ever come down here.' I'd do it and they'd have the room packed. There are an awful lot of good people that I spoke with.

Yost: At these conferences at schools, is it primarily sponsored projects staff or researchers?

Sherman: Primarily researchers. I would do separate presentations for the sponsored research staff because they were interested in different things than the researchers. The

researchers wanted to know how to use FastLane but they also wanted to know all about where they could find more solicitations that they could apply to. So they wanted to know, really, how to use NSF's website. So I would incorporate that more, while with the sponsored projects research office, they wanted to know how to navigate the research administration part, so I would do that. Some schools would have all their financial people come in and I would talk about the financial administration part. What surprised me was that when I did this, usually that school was some months in submitting their quarterly cash transaction report. I said, you can't play games. It's there. It's easy to do, so do it.

I was very versatile and whenever, however, even though I came with a handout, if they wanted it in a different direction I could do anything they wanted. Very flexible.

Yost: On campus visits were you often giving separate talks to sponsored research office staff, as well as PI talks?

Sherman: Yes, sometimes. I remember when I went to the University of Illinois Urbana-Champaign and I could only spend one night there because I had to be back before the end of the fiscal year, so I guess I got home at 11 o'clock at night. But I was giving presentations standing up, presentations — they didn't have computers for anything, they had a big screen — and then at lunch time instead of lunch or eating anything, I went to the director of research, into his office, and gave a special presentation showing how to do things to his people. Anything they needed — any special needs — because I

understood the system very well and I'm very flexible. And if I couldn't help them, and I knew who could when I got back. I would get their problems fixed.

Like one time I was in Salt Lake City and I was waiting for the computers to arrive so I could give a presentation. I was just sitting outside the room and this fellow comes up and sits down next to me and says, 'What are you waiting for?' I said, 'I'm waiting for this room to be ready for the NSF presentation.' He then said, 'Oh, NSF, I've been trying for five years to get our university's name changed and I can't get anywhere.' I said, 'No kidding, what's your name?' And I wrote it down, and within two days after I got back, it was changed.

Yost: Were there certain questions that were very common in the early days that you got and what are some examples?

Sherman: Well, one of the biggest problems we had in the beginning was converting a document to a PDF. Everyone had their own conversion software. Now we have PDF conversion software online. We want all conversions done online. We don't want anyone using any conversion software but what we have online. Before we would have something like 51 percent of all proposals coming in with errors because they would use free conversion software because they didn't want to buy Adobe. They didn't want to spend the money. Their universities didn't want to spend the money. The result was that we'd have all kinds of PDF versions from their using this free software to convert their Word files to PDFs. They'd say, 'Well I can see it on my computer OK.' I'd say, 'If I

can't see it on mine, it's no good.' And they'd get all upset and begin yelling. It was Craig Robinson who pushed and got the conversion software online. Now we have about one or two proposals that we can't print out. The whole idea was that everything would be online and we'd get rid of paper but we still have paper. There are some divisions that are all online — a couple — but for most programs it is still paper. Everything is printed downstairs and brought up. But at the beginning, we had a lot of problems because of this free software converting to PDF. It just didn't work. And there would be times when they would email me the Word document and I would convert it here and upload it for them. And that would work. But, you know, I had to go home too. (Laughs.) I did that a lot. I would also spell check it and grammar check it before I converted the document to PDF. It was amazing that some of the prime universities that would have 10 million spelling errors. This is one of the reasons some of them are declined because the reviewers get so tired of having to read grammar and spelling errors. If I was going to convert a document I would spell check it for them and correct the errors so at least that document would look good. I did lots of things to help them.

Yost: Very kind.

Sherman: It's just me.

Yost: Roughly how much of your time was spent going out and giving these presentations, and how many would you do a year in, say, the '96-'98 period?

Sherman: I have a list I can send you. I have them. I did a lot. I did a lot of traveling.

Yost: You mentioned Carolyn would occasionally give talks but were you the primary person that was going out and giving these?

Sherman: The others didn't want to do it. NSF has mostly introverts and I was more extroverted.

Yost: Can you talk about the internal training?

Sherman: I did all that.

Yost: FastLane was not only a major adjustment for the schools that were applying for research funds but also a major change for NSF internally. When did training start? What did it consist of? How did you do it?

Sherman: We have training rooms with computers and we used those rooms. I can show you them if they're unlocked. People would come from the different directorates. I think it was almost compulsory that they had to come and sit down. Of course, some people didn't. It was strongly advised that they all come down to understand it better--understand how the PIs were creating and submitting the proposals. At first it was not required that all proposals had to be submitted using FastLane. It was optional until 2000. After 2000 it became mandatory. Before that, it was optional either paper or FastLane, unless the

program solicitation stated that the proposal must be submitted using FastLane. That was the program, the Neal Lane program, the Director's Award for Large Colleges. Then two years later they had one for small colleges. The proposal was required to be submitted by FastLane. As time went on, more NSF programs required the proposals be submitted by FastLane because program officers saw that it wasn't so bad and they would have everyone call me if they had questions. So it wasn't so bad for them. However, I know one time someone called me up from Paris and he was so nice and he had some questions about FastLane. So I told him how to do this and this and my ear is very good, I do speak French, and I didn't hear any accent so I figured he must have been American as his English was very American English. Less than 30 minutes later one of the program officers calls me and bawls me out, 'How dare you talk to a Nobel Prize winner!' And I just said (heavy sigh), 'Okay, thank you.'

Yost: You've given an idea of how it was overwhelming at first how many people would contact you?

Sherman: Well you asked about what we gave for the internal presentations. We would give different ones. We would tell them sometimes how to do reports online, what the reporting system looked like, so they'd have an idea of what the reporting system looked like. We'd give them how to do a proposal, so they'd have an idea of what the PI was going through in the different parts. Everything that was required that I was showing them was also listed in the solicitation. As it went on it was noticed that we kept adding new parts to the proposal until, after a while, how many can you add? Then we found that

some were very consistent. They asked for the summary. They had a cover sheet. They had a project description. They had — I've already forgotten things — but others asked for additional documents, special for that program. Craig decided to add a new document option called Supplementary Documents. That way a wealth of documents that are unique to different programs could be uploaded there. That way the documents that are pretty uniform for most proposals are there. That has worked out quite well. Of course, it works out better now because we convert to a PDF. The downside of the Supplementary Docs — it was going to be changed and it just has not been changed yet — is the ability to sort the documents. This is the main complaint -- that they are in the order they are put in. So if someone wanted the documents in a certain order, they'd have to delete all of them and start again so that they could be in the order they want them to be seen. You can't sort them, but that is on the list of things to do but it has just not yet been done.

Yost: What was the response of people at the directorates to this whole system?

Sherman: For some of them, it's just regular human nature. Some people would see the demos that we would give and say, 'Oh, I like this.' Other people don't want to change the way they're doing life and this is life, period. You see this everywhere. They're happy doing things the same way they did 20 years ago. We also found that here. But the plus about FastLane was that Neal Lane was 2,000 percent behind it. So it was top down versus bottom up. We did not have to convince top management — meaning the director's office — that this is the way to go. They already said this is the way to go and I think that was a big plus to its success. The other success is the way we had it screened so

that there was not a requirement right away, you have to do this. The more comfortable everyone got, the more they used it and the better the internet connectivity became. There would be sometimes, especially in the Southwest, where it was very slow, especially in the afternoons. The busiest time on the internet, we found, was between 2:00 and 5:00 p.m. ET. So when I gave presentations in the western part of the U.S. I said you've got to think about this. Once 5:00 p.m. ET comes, that means the eastern seaboard people are going home, shutting their computers off and they're not using the internet. This is the time for you to use FastLane. Two to five p.m. Eastern time was a really busy time. The internet has improved an awful lot since we began FastLane. The Southwest used to be horrible between that two to five period, the way the interchanges were. It was really awful for them. A real nightmare for them. They would call up and sometimes everything would be there and I'd submit it for them, if everything was there. But they couldn't get access; they couldn't get on. There were times also when the connection to all of New England was shut off. I remember getting a phone call from an organization in Maine. Their proposal was all ready to be submitted but their internet connection was dead. I submitted for them while we chatted on the phone. I could hear them sigh with relief. Their proposal had been submitted on time.

NSF began with wired connectivity to the web. Craig learned about wireless connectivity and had it installed on the roof of the NSF building here in Ballston. Connectivity was certainly a lot faster. Then we had a snow fall. The flakes were huge. So huge in fact that they cut off the connectivity to the web. Something else we learned.

Yost: Moving back to the external presentations that you gave, for a moment, you obviously got a lot of feedback with regard to questions and comments from many different schools. How were these questions utilized? And did it impact future design?

Sherman: I never thought of the comments as from individual schools as much as I thought the comments were from users. That's how I went forward. If I thought I'd get things changed on the screens, or if they came up with a comment that was really good — there was no way I could make a difference — then I discussed it with Craig and he was very broadminded about things, and we tried to make a difference.

Yost: Can you discuss some things that were changed, based on feedback?

Sherman: The biggest change that we made was the conversion of PDF. That was a nightmare for users who refused to buy Adobe and it was a nightmare for us because we had so many printing problems. One time a fellow came into my office, unannounced, sat down and was complaining about his beautiful proposal that didn't get accepted, was declined because of FastLane. Well, part of the problem was that in the past, for their project description, they would cut and paste things onto paper. They would paste diagrams, pictures, onto the paper. With FastLane you had to import it into your document and then convert it. Now some of the pictures they were putting in were made very weirdly and they didn't convert well. That was his complaint. 'Look at this; this is how it's supposed to look! And this is what FastLane did to it and I got declined because they couldn't read these documents.' Well, one thing that we did change is that we

allowed the PIs to mail NSF paper copies of their proposals. If they were concerned that their documents were not going to come through well, they could submit them by paper, but they had to let us know about it and they had to submit these within five days following this deadline date. One time I received a big box in *my* office. Because it was addressed to FastLane the mail room delivered it to me. As soon as I found out who the program officer was, I brought it to him. He's still here at NSF. He looked at me, shook his head, and said, 'You know, we had the review of these proposals last week.' To pay for them, that was a waste of money. They had to send them in by a certain date and that's why we said five days. If they don't send the proposals in within five days, forget about it.

The other thing we had, which was a real nuisance, was a cover sheet. They had to mail in a signed cover sheet, with a signature, and if you looked at the signature quite often it would have initials under the signature. In other words, that university official didn't sign it. Someone else, who had permission, signed it. Under Craig Robinson, we changed that so that a person had to have permission to sign and a person had to have permission to submit. Now if the submitter also had permission to sign everything was electronic — no signed papers. Then, if that person who submitted did not have permission to sign, then someone else had to come in and sign electronically. I did my own survey and found that it took from one to 10 or more days for them to send in signed permission, so that was one of their gripes that we were able to work around. It was hard to get the general counsel to approve. They were very slow on approving some things in the policy office too. I really cheered when they allowed electronic submission because it didn't make any difference. Someone at that university was signing for the university, whether they signed

on the paper or not. If someone was using, and this often happened, the login of the person eligible to sign and submitted for them that was their problem.

The other problem that arose was with subawards for a proposal. The general counsel settled that by saying that the awardee was responsible for the use of money for the subawardees. They had to do legal contracts with the subawardees so that they would cover themselves. NSF did not tackle the subawardees, we just tackled the awardee.

So there were several things that came up once you started electronic submissions. The result was a better product. I noticed, too, as time went on, that many people who were set in their ways — only wanted paper — also moved on too. Some retired or they left the agency. As time marched on, more people became computer savvy and there were fewer objections.

Yost: Was there feedback that led to changes in design elements; what the user saw on the screen and how they input information?

Sherman: Not really. We were always here trying to make it easier to understand. Craig came up with the idea of having three questions. This is how it's now. You have three questions. Do you want to do a proposal? Do you want to do post-award? There are three things there that you choose from. Before we would have a very busy screen for everything. He clumped them into pre-submission, post-submission, and post-award. That was easier for users to understand. When they do post-award they see where they

have to do the reports. They have everything to do with a post-award. By clumping them like that, it was much easier to understand and do. Here, we were always trying to make the screens more readable, fewer clicks to get where you want to go. I don't believe the users came up with that. We did have a committee of representatives from all at the beginning of the big universities, small universities, and junior colleges to learn how they wanted the proposals to be submitted from their universities. How were they most comfortable. What came through is that some of them were very lax. But one woman from the Southwest said when she first got into sponsored research office someone had submitted a proposal to the Department of the Army and won the award. He had submitted it directly, not through any sponsored research office. No one at the university had read the solicitation before it was submitted. His proposal was the lowest submitted. He had not thoroughly read the solicitation which called for building a research center and had not included the cost of constructing the building. What he had to do as a result of receiving the award was build a building. That's why he was the lowest but he had never included the cost of building the new building in his proposal. She said this was a real dilemma and that is why she was in charge of the sponsored research office. She said, 'I am really anal at reading the solicitation. What is required. I don't want the university to have to build another building.' Many researchers don't want to read. They just want to do the research in an area. Many of the sponsored research offices want to get down to the nitty gritty. What are you proposing to do? We don't want to build a building. We're not getting paid for it. So they said that they wanted to see it before submission. There's no way a researcher can submit directly, unless the researcher is an independent researcher. So this is what we did because we do have some programs like

post-doctoral fellowships that are from independent researchers. They get the money themselves and they then work at a university but they get the money directly and have to take care of their taxes from the money too. With the other researchers they are all under a university. The university gets the money and does it to them. It's up to the university to solve their tax problems. We don't care.

At the beginning we required social security numbers and a lot of people didn't like that. Unfortunately, our servers, our mini, everything was tied together with the social security number. What we did under Craig was create pseudo-SSNs. If they did not want to use their social security number and they were not an independent researcher, they could use a pseudo SSN. We would create a pseudo SSN for them starting with three zeroes. Now it's all across government. You can't use social security numbers. (Laughs.) So our pseudo SSN is now called the NSF ID, starting with three zeros. I know it's best because there're so many crooks trying to steal identities and rip off your money. When we started the pseudo SSNs people would tell me, 'Oh, it's not a problem, I'll put it on a sticky right on my monitor.' I would say, 'Don't tell me what you're going to do. I don't want to hear about it.' But that solved that problem. Now when they are signed up in a research administration there is a place where they can create the NSF ID.

Yost: What about feedback internally from program officers?

Sherman: They were very vocal. They did not like having the errors in some of the documents that would slow them up. After we had our own conversion online, that

problem was solved. We were also involved with the review program and the review process. We listened to them very extensively and we designed that review program for them so they can do panels. I was very involved with that too. They can do the panels independently. They can either have the review here, and some of them will have reviewer proposals here. They can also send them out to be reviewed at the site of the reviewer. They can also have a combination of the two on how they decide who's going to get the money. When we first started the review process program, we listened to the program officers and that worked so well. That was pretty mandatory. One of the first that was mandatory for NSF.

And then the reporting systems. They complained and complained about that because at first we only allowed the PI to submit it. But now any of the co-PIs also can submit that final report. The problem is that we have much better control of who submits now and if someone is a co-PI on a proposal, the award has expired, and that project report has not been submitted, the PI and all the co-PIs can no longer get any awards at NSF. So the plus is that if someone has submitted a proposal and it has been awarded but they can't get the money because the final report from a prior expired award has not been submitted. Now the co-PI can go in and submit the final report. Once it's approved by the program officer, the PI and Co-PIs can receive more NSF awards. We did that because one time I had a PI call me. He had been a co-PI on an award and had submitted another proposal to NSF which was, being reviewed. The PI of the expired award was the son of a famous researcher who told everyone to take vitamin C to cure all ills. The son had died and could not submit the Final Project Report. I told this fellow who was the Co-PI on the

award, 'You know what you're going to do. Go in as this fellow because you can't go in yourself, even though he's dead, go in as this fellow and submit the Final Project Report. Here's his information.' Then we changed the final report to allow the Co-PIs to submit it also. Now both the researchers and the program officers are happy. The Final Project Report is received and the award is closed.

We have a lot of rotators that come in and it takes a while for them to understand how they have to do things. So the people, really, doing most of this work are the program assistants and the specialists until the program officers get up to speed on it.

Yost: In the early years of FastLane, the late '90s, can you name the members of the FastLane team?

Sherman: There were just three of us. There was Carolyn Miller, there was me, and Dan Hofherr. That was it.

Yost: What about Fred?

Sherman: Fred Wendling was Division Director. He was there, always positive. I never had any problems with Fred because we always made him look good. We would also have detailees from different divisions come down for six month periods. Some of them were fabulous people. I was in charge of them. I supervised them. I'd say this is how things are done. They'd come in with questions and I'd show them how to it. Then every

so often we'd get a person who wanted the detail and glory but they didn't want to do anything. Fortunately they were few and far between. Most of the detailees were very hard workers and I really appreciated their help.

Yost: Can you tell me the origin of Help Desk?

Sherman: We would have detailees and they would answer the phones along with Dan Hofherr. But people (pause) were not able to solve all the problems the callers would ask about especially during a deadline date.

Yost: And what was Dan's title, do you recall?

Sherman: I don't know what his title was; he was like a GS-6, 7. He was supposed to answer the phones. A lot of those assigned to answer the phones got sick of it and would take a walk and wouldn't answer the phones. I ended up with a lot of the phone calls. Some of the detailees were very good, and could answer the questions and problems while others just didn't know but they would write down the problem and come to me. I would then call the person back. So the most people we'd have there would be the three of us and a detailee. The calls got so much that Craig is the one who said we've got to have some contractors in here because we can't hire more federal workers. We found a room for them near my office on the fourth floor. We started out with a supervisor and two people. One of the first contractors is still working at the Help Desk. He's down there now. I can introduce you to him.

Yost: Do you recall what year this was?

Sherman: I don't know — 2000; 2001? I don't remember. I really don't. Everything is a blur. But Craig was instrumental in that.

Yost: But there were definitely several years in which you were (pause)

Sherman: I was the one everyone got to.

Yost: Answering all these calls.

Sherman: All the calls. Some detailees would take some and Dan would take some but for the most part, I was very technical and I was able to do it. I took melatonin at night so I could sleep. It was just unreal. Then as we hired more contractors for the Help Desk, we were able to find a bigger office for them and I trained all of them. We were a really good team and I told them, 'Don't make up answers. If you don't know the answer be truthful and say, 'I don't know the answer but I will get it and call you back.' and that's what they did. One time we got a contractor working on the Help Desk and I about had a fit because she was making up answers. She didn't know what she was talking about. We got rid of her fast because others in the room heard her answering this way and it was not good for morale. Then I would get calls back that said, 'You know, someone at your Help Desk told me this.' I would say, 'Who said that?' You've got to be honest. If you don't know

the answer, you tell them, 'I don't know the answer but I'll find out for you and get back to you.'

The hardest part of the Help Desk was keeping track of the different types of questions being asked and the number of calls received. Then we got an 800 number. Before, everyone had to pay to call us up. Craig got the 800 number. What happened once the 800 number became active is that we started getting really weird calls like from Nevada — area 53 or 51. 'Oh, I saw green people yesterday, three feet tall, they couldn't talk but I could communicate with them.' I said, 'Oh, no.' Then we'd get calls from other people and I suspected some of them were in institutions. But so long as they didn't threaten us, we couldn't do anything about their calling. We had one fellow who wanted to argue all the time. He would call up in the afternoon. He even called up Rita Colwell, our Director at the time and wanted to argue. Of course he didn't get to her. He got to the people outside her office. I couldn't find out who he was. I thought he was in some type of institution because he had this free time from two o'clock so he could call up people and argue. Couldn't stop him. Police couldn't stop him because he never threatened us. He just wanted to argue. But that cut down on the Help Desk time so they would forward him to me and I'd get him calmed down and I'd say, 'You have a nice day.' (Click) I could tell he was drinking something and it sounded like he was smoking too, and drinking, but don't know who he was and couldn't get his phone number. The phone number was blanked out on our phones. Now, whoever calls, I can see on my phone who's calling. But then, he never threatened so I couldn't have it stopped.

But I was very supportive of these people at the Help Desk. Any time they got into arguments with NSF staff, I said, 'Fine. Don't argue with them. You can come with me but keep your mouth shut.' And that's how we handled things. I would negotiate; I would talk with the program officers and we would get things smoothed out.

Yost: You mentioned that all calls get logged that come into the helpdesk (pause)

Sherman: Yes, it was a very primitive system at the time. They mostly wrote down who called and what the call was about. Now we have an online system with Seibel software to do that. It's been working extremely well. We were just trying to get some handle on what calls were coming in, what times — usually they would be calling right before a submission time, before five o'clock, that was a very busy time, for the East coast, then before six o'clock, and then most of the people had gone home so they couldn't call us but calls would be waiting for us the next morning.

Yost: Was it difficult to set staffing levels, given that the demand on Help Desk differed because of deadlines?

Sherman: It was a surprise because demand didn't really differ that much. There were some programs, such as CAREER. CAREER was a bad one because CAREER was always with new people. They'd never used the system before and they had a lot of questions. One time the first year with FastLane, any time that we had a lot of submissions for a program, that's when our servers went — they didn't die, but they didn't

walk either. They were almost dead and we would have to put something up on the FastLane website that we extended the deadline to the next day. Some of the program officers didn't like extending the deadline. It was something that made them very angry that everyone couldn't submit on the deadline day because FastLane was down. There are different types of CAREER proposals. We had each type submit on a different day. That solved a lot of problems.

One time the program officers were very angry because of what happened because people were working in the shopping center across the street. At the north end of the shopping center there had been a J.C. Penney's. Penney's closed the store and Hecht Company decided to put in a furniture store at that end of the mall. They already had a store at the other end of the mall. One of the workers — I don't know how he did it — but he cut through the main electrical line for North Arlington. So all of a sudden, we didn't have any lights or electricity in the whole building. Our servers shut down in an orderly manner because we had the UPS which was a plus. The servers all shut down in an orderly manner so we lost no data. Then I had to go around to each of the program officers and say, 'Is it all right with you that we have extended the deadline? They can't submit today. We have no idea when the servers are going up.' Most of them said yes. One of them at that time said, 'I'll only extend it to noon time.' I said, 'Whatever. They can't do it before — I hope it'll be up in the morning, but I can't promise you.' But now we can make the call of extending deadlines. If there's a reason why the server is dead or something happens to the internet line, and those trying to submit can't make any submissions, they could call up the Help Desk and we would have a voice mail message

available also. The FastLane website was still active and they could call a number in the upper right hand corner. We put something there so they can call up and they can hear that. That was something too, because the phone lines didn't work either when the main line was cut. Everything was dead.

Yost: So there's a way for you to authorize [interrupted]

Sherman: Now there is. Before, I had to go to each one of the people whose program had a deadline and get their permission to extend the deadline.

Yost: That could be a lot of people.

Sherman: It was a lot of people and some of them were not very nice, even though I knew them. I'd just say, 'Thanks.' Most of the people here have been very nice to work with.

Yost: With, initially on paper but later on this Seibel software logging these calls, how was that information used? Was it analyzed or?

Sherman: It all comes down to garbage in, and garbage out. This was one of the problems they have found with this Seibel database software and, I think, with any other type database software for this purpose. This is all made from scratch and it's in categorizing. It all depends on how the person receiving the call puts in what type of call

it's about. That has been the biggest problem, so that you can categorize the call. They'll maybe have the top one correct but the next couple calls might not be correct, and subcategories not really on the money. It's all who's putting it in and how well they understand the system and the better they understand the different problems. But it has helped, overall, the different types of problems they have. We know ahead of time, too, just from past experience, when we're going to get more calls. It's like submissions for CAREER awards. We know we're going to get calls because the people submitting are not heavy FastLane users. And we get heavy calls for the post-docs, whenever there's a post-doc solicitation deadline because those are all independent users all doing it by themselves. The university will help some of them but for the most part, they don't get any help from anyone. So they'll call us up.

Yost: Do you have any examples of how changes were made to FastLane, based on Help Desk data?

Sherman: I don't think the data has affected FastLane. I don't think the data affected, really, the software of FastLane. Most of the information that has been collected are the types of questions people are asking and the volumes for different programs. And then people will ask about — not just proposal preparation, they'll call up about doing final reports or annual reports.

I know I had someone call me from Princeton. She was an assistant in the office of a researcher. She called the Help Desk and asked for me, 'Talk to Bev.' She was

complaining because her boss, this famous researcher, did not get his money for the coming year of his award. I investigated it and it was very easy to understand why he didn't get his money. He had never submitted an annual report. The rules are: no annual report, no funding. He had a continuing grant. If you have a standard grant, you get all your money for how many years you have the award, at the beginning. But his was a continuing grant. He received his year one funding. If he wants year two funding, he had to submit an annual report. Year three, annual report. Those are the rules. And he had not submitted the annual report for his award. I called back and said he didn't get it because he didn't submit his annual report. She told me that he was a famous researcher and he didn't have to do that. I said, 'Well, NSF treats everyone the same way. The rule is, submit the annual report and you'll get your money. You can tell him from me to get off the Greek log and get his report in,' and I then said, 'Thank you.' And guess what? In two days, his report was in and he got his money. What he didn't know was that the program office was ready to close out the award because it was like six months and he hadn't submitted the annual report. You know there are rules. We treat everyone the same way. Some people think they should be treated differently. Well, I'm sorry. We try to treat everyone fairly and equally.

Yost: I think that's an important thing for government to be doing.

Sherman: We have. We've treated everyone the same. These are the rules. We need your report. We need to analyze it and review it. Once it's approved you get your money. The only time it's held up is when, say, the program officer's on vacation or the program

officer is out of the office and hasn't had a chance to look at the report. Sometimes, they don't realize the report is in. I tell the researchers, if you send the report and it has not been approved within a week, you might send an email to the program officer and say, 'I wonder if you've had a chance to read the report and if you had any comments.' I also tell them that there's nothing wrong with doing that. It gives sort of a yoo-hoo, there's something there. The program officers won't get upset by that.

Yost: Were there times when the FastLane team sent out surveys to get feedback with the idea to make design changes or actually making design changes?

Sherman: The committee that Carolyn supervised of representatives were always asked for their input. I seem to think I sent out a survey one time.

Yost: And was this for FIRCOM, the committee?

Sherman: What committee did you say?

Yost: We've come across FIRCOM, the IT coordinating committee.

Sherman: We had committees that were inside, too. We had committees of program officers so that as we were writing things, creating things, we wouldn't have to do it over again. So we had their input. This is what we plan to release. We would show it to this

internal committee before we released it or as we were creating it. I really don't remember FIRCOM. This IT one sounds more like an internal committee.

Yost: Yes, that was an internal committee.

Sherman: FIRCOM I don't remember. The group of the federal agencies, I think that was e-government and Craig was in charge of that. And that was a real shame too, that the Department of Education held out, because we would have had a really nice intergovernmental process.

Yost: In interviewing people a couple names came up and I want to see if I could get more information on what their role was; one is Jerry Struck.

Sherman: Stuck. S-T-U-C-K. Jerry Stuck was I believe a branch chief, GS-15, and he was Carolyn's supervisor. I think, too, that he was deputy to Fred Wendling for a while. He was also acting division chief, the Division of Information Systems Chief. Instead Andrea Norris was selected from outside. He was a very nice man; very nice to get along with and very smart. He had a very good understanding of IT and I think he was the one in charge of the first attempt to have electronic submissions in the 1980s. He was always very nice to work with. He was always positive and very encouraging. He then went on detail to a federal IT internet group until he retired from federal government. I would see him at conferences.

Yost: Another name was Evelyn Daisy?

Sherman: She went by Evelyn Baisy-Thomas. Do you have Evelyn Baisy dash Thomas? That was her name. She was put into the FastLane group and I trained her on how I did outreach so she and I did outreach at different places. She's retired now.

Yost: Were you the only two that were going out and doing these training sessions or were there other people at times?

Sherman: There was just the two of us. Dan Hofherr was supposed to go out and he went at the beginning, but then he didn't like going so they didn't make him go anymore.

Yost: You also had an important role with negotiating contracts as CoTR. Can you describe your work there?

Sherman: I was CoTR on the contract for the Help Desk and I was part of the selection team for the new contract. There was a group of people and we met and discussed everything several times, going over the submissions from different companies and selected the present contractor for the Help Desk. I was CoTR for other contracts, too, that the Division of Information Systems had.

Yost: Can you expand on that?

Sherman: We decided we only had 50 laptops to do panels. And those laptops were getting old and some of them couldn't be used anymore. Some of them were not worth repairing as they were out of warranty. Our panels had needs so what we did was put out an RFP for renting laptops. The RFP was rather unique in that the different directorates could use this RFP, this contract, but they weren't required to. There were other laptop rental companies that they could use if they wanted. But the plus about this agreement with this company is that the price remained the same for a certain length of time. It was very interesting. I was working with the various companies that we had. We have one now that I negotiated and that was with a company named Rush. They have been very good. I suggested that they always wear Rush shirts, clean Rush shirts. I said that's good advertising. Some of the companies that brought in their laptops had some very grungy looking installers. I just made the recommendation. I also found them a storage unit closet they could go into so they could store some things here for emergencies. I had a good relationship with them. Whenever something happened I was there helping them find out what was wrong so that it wouldn't happen another time. They've been very good to work with.

And then I was CoTR [Contracting Officer Technical Representative] of another one, for buying laptops. And CoTR of another one, where we buy all the desktop computers. We negotiated that every year so that we have really the latest technology. It was interesting, this last one I did, the company went bankrupt. They were very difficult to deal with. The next supplier of desktops was Dell. They were very responsive and wonderful to deal with.

Yost: You mentioned the 50 laptops for these panel reviews. Can you talk about developing that infrastructure; tell me, was it smooth?

Sherman: It was smooth because the people who were setting them up were part of the Help Desk and this is what they did. Before they came here they were setting up computers, so they were very techie. As time went on we had — I can take you into some of the rooms — you saw how the laptops were when we walked by so that all the cables were in the middle. We tried to have that centralized in the middle because these rooms all were made, from the beginning before we went into the building for panels, to be used for panels; and for meetings; mostly for panels. We tried different things for panels. As time went on, I made them make some changes too, because they complained. They said they had to crawl under the tables all the time. I don't mind crawling under the tables but it just took them a long time to set them up and take them down. They got more efficient, but having the setups already like this — you just plug them in and they're all ready, as many as you want. So as time went on, we saw things improve and it got easier, both the setup and the tear down. The tear down and the setup became a crisis. It still is here because some of these panels last longer than they're supposed to. These people have to have a life too, and get home, and the new panel is going to use those laptops and they're going to start at eight o'clock the next morning. So that's a crisis — always a crisis — but Rush has been able to overcome it by having the people here at those odd hours, so they have a turnover. But they've been really very responsive.

Yost: In terms of security, you mentioned the early days with the firewall and social security as identifiers and moving away from that, are there other security issues related to FastLane that have come up at different times and, if so, what are those?

Sherman: Security? (Pause.) We've really been very blessed. Our IG checks our servers and hires hackers to try to get in. We know they're going to do this and we try to break in ourselves. We have people trying to break in, always trying to find holes somewhere.

This is a high priority, trying to find holes, because we don't want anyone coming in and messing around. We do have backup files, backup tapes. We backup every 24 hours so we have two weeks. We rotate those tapes. We really have been pretty fortunate, perhaps because of that University of Iowa person. But now the hackers are not young kids 18 to 25. They're very professional, from the Czech Republic, from Russia being paid by the government, from Nigeria, and now we're having those from China. You can tell that they're from China because they only work four hours and then they take lunch, and then they work four more hours. That's when they're identified not only by their IP address.

As with this virus that was going on, that was supposed to erupt yesterday, even Microsoft admitted that these are very proficient people, and other people said they are really good programmers. When you get people that are that proficient, with governments paying them, they're doing it for money, yes, but they're not doing it alone. Someone is paying them well. People are trying to get into databases like USA Jobs, where that is a database of resumes — and they did it. Some people have broken in and read these resumes. Social security numbers are present on the resumes, especially the USA Jobs, because that's a federal site. Monster.com, they let people in. The people got in and went

all over the place. People are now doing some very sophisticated hacking. As I said, Russia. Russian government and the Chinese government are funding them to break into US federal agencies. I don't think other agencies are as up-to-date with their servers and their protection as we are. NSF has always been in the forefront of being ahead of things. I think it's partly due to that fellow from Iowa. We would have never thought of it. It never entered our mind that we had to do something to prevent someone from breaking in to the servers. I wouldn't think of breaking in to something. I remember when I was working in computers in New York City, there was a fellow who is a Navy Reservist joking about his teenage son loving his computer and how he was breaking into the computers of all these big name companies. He said, 'Oh, it's very easy.' I said, 'Oh oh, he's going to be arrested.' Well at that time, there were no laws. And even if there are laws now in this country, how can we stop anyone from Russia, or any other countries like China from breaking in? They're very sophisticated. There was one crew from Africa that was breaking into things and making money. They had some people here, plus in Africa. It's big time. The ex-hackers are really the ones making money now too because they're working for these security firms. As a young kid they were doing the hacking and they understand better than you and I do how to break into website servers.

Yost: On a regular basis you have teams trying to identify vulnerabilities?

Sherman: Definitely. Constantly. And then the IG hires them to find holes and they get very happy when they find a hole. They feel very superior if they find a hole, 'we gotcha'

and it's not nice for the heads of the IRM Directorate. If they have people find a hole, NSF can plug it up.

Yost: Broadly, do you feel that FastLane has changed merit review in any fundamental ways?

Sherman: I think it has because all the documents are the same format. It's also the same type font, for the most part, because we have standards now in type fonts and size. But at first we didn't. There were some standards of 1-inch margins, top, bottom and sides. They had to do that. Then we'd get some; and the program officers would come to me, 'Well this fellow has a half-inch margin top, bottom and sides.' And I would say, 'Decline him. Send it back.' 'Oh! I can't do that!'

Another thing that we did — and this is thanks to Craig — if someone has submitted a proposal and they find, 'I uploaded the wrong document,' they can go in until a reviewer is assigned to the proposal and update it. The update has to be approved by the program officer and sometimes these researchers are pretty slick. They will do this because they didn't have time to finish the project description and say, 'Ha-ha, I can just upload anything and the next day when I finish it, I'll upload the whole thing.' Well, the program officer looks at the document that was submitted and what was next submitted — uploaded after submission — and they can tell right away.

A person called all upset because the proposal had been submitted. She had just submitted it. She had printed it out like I told them to look it over and see everything — before you submit it, do it. Well she was in such a rush. She submitted it. She then printed it out after she submitted it. She had put a fancy title on this project description and she misspelled two words. She said, ‘Bev, can you help us?!’ Well, at that time you didn't have the ability to update afterwards. The next day she sent me the new one and I uploaded it because they were being honest. It wasn't that she needed more time, she had misspelled the words in the title. Fine. But many people will use that because they didn't have time to finish. They started too late, or whatever. Sometimes the new document is accepted, and sometimes it isn't. It's all at the pleasure of the program officer. We don't want to encourage program officers to agree to documents that never were completed until after the deadline. So they don't do it. Also, the program officers, if it's submitted after five p.m. — they can tell the time — some of them say sorry, it was submitted after five p.m. They tell me that they have so many proposals now that they don't need any more proposals. Others will have a leeway and let them do it until midnight. Or, if they have a good excuse why they couldn't have submitted it on time.

Some of them have some wild stories. Others are wild. Some are weird but they're true. Like one fellow told me. I was helping with the CAREER submissions. He said, ‘I just couldn't get this on there. I was there to give this to the FedEx guy, but the train came early and it went off without me.’ I knew he had submitted it and everything was hunky dory, everything was all right with it, and I said, ‘I will accept it tomorrow. Just send it in.’

The early goals with CAREER were completely FastLane. The program officers would say, ‘Bev, if you feel in your heart that this guy had everything done, just give the okay, you don't have to bother us. If you know everything is right — you know they get into some wild situations, you know, this is life — they're not trying to put something over you to give them an advantage over someone else who got everything in on time. So we would give them the waiver. But they wanted everything and everyone on an equal playing field. I think FastLane did that because they had the same format, and when, after it was printed, they came in the same order. While before, if you were sending it in yourself, it could come in any order. And also, if you had pictures they could come in any format. Sometimes they were giant ones, now they are part of the project description and they come out very well now. They really do. But if you don't think they will, they can be sent by paper. But again, they must arrive when they're supposed to.

Yost: You mentioned earlier, different generations of FastLane, the design of the system and how elements of the third stage are still in the current fourth stage but not the second. Can you talk a bit about these design stages and were you involved?

Sherman: Oh yes. When we first started with FastLane there was just one screen. As we added new products, we just added to it and it just got so very cluttered. It isn't good to have a cluttered screen. After logging in, the users would just say, ‘Where do I go now? What do I do now?’ So Craig thought up the idea of clumping, and I thought it was a good idea. Clumping the activities so that you would have pre-submission, post-

submission, and post-award. That worked well and it is still working. We have added to the different clumps.

We now have Letter of Intent. That was an afterthought because that was a special requirement that certain programs have. Everyone uses the Letter of Intent differently. Sometimes they just want to see how many people are going to submit. It's required or it isn't required. They may just want to see how many proposals will be submitted. It doesn't obligate anyone to submit a proposal. Other times it is required because that is the screening out for those who are going to be invited to submit a full proposal.

Then we have a pre-proposal that would be another screening process. Maybe we'd get 500 submissions for the pre-proposal. We'll have a panel here and then 40 will be invited to submit a regular proposal. The others will be strongly discouraged. Now some people will still submit but their chances of getting an award are not very good. It all depends on what the program officer thinks is best. I don't like to make that type of decision so I was always happy that that was not one of the decisions I had to make.

Yost: The actual programming to make these design changes, was that done by the team or contractors, or (pause)

Sherman: No, it was all done by the contracting firm, Compuware. They did all the programming.

Yost: They remained a long term contractor?

Sherman: They were until their contract ended. We couldn't extend it.

Yost: Do you recall when that was, roughly?

Sherman: It was a bad time when we couldn't have them anymore. I want to say it was around 2005. Then Booz Allen Hamilton got it. The thing is, when our needs changed, Compuware was very responsive to those needs and did not require that we renegotiate the contract so they'd get more money. I would make up a screen and copy and paste, or even draw it up, and give it to them and say this is what I want, and they'd do it. Zippo. We were also allowed, at that time, to migrate constantly during the night, and that made a difference. Now we only migrate once every four months and we never felt that was good, that doing small migrations was much better. It did work much better and the programmers knew where things were going or if they went wrong and we could get back to the way it was. At the time, Tom Willingham was very good in that way too. I've given you his name before. I saw him back here. I don't know if he is back here, but I don't think he's working here at NSF as a contractor anymore. But he worked for Compuware. And then the one that was super duper was, I gave you his name, Rich Schneider, he's still here. And I told him about you too, because he did all the nitty, gritty of setting this up. Really, he was the big programmer of FastLane. We have another fellow, Larry Boswell, who did a lot of programming, and was very responsive. He's

now working at NSF as a federal employee. He was so good they said this job is coming up, why you don't apply for it. He's still a good person, does good work.

Yost: FastLane can certainly be seen as a very early cyber-infrastructure. In looking back, what lessons are there to be learned from the development of FastLane?

Sherman: I think, first of all, you have to listen to users. And we did that. How do you want your proposals submitted? To all the universities and small colleges, and we did have good responses. The universities were very happy about that control. So they knew everything that was going out and they could print it out. We changed, also, the research administration part to get more with their needs, and also the financial administration part, to get more with their needs and our needs to, as time went on. Also, what was good about FastLane is that it is easy to use. It was and still is straightforward and easy to use. We tried to make it that way, constantly, because the easier it was to use, the fewer phone calls we were going to get and the less frustration the users would have. It got so that I would go to different conferences and they would say to me, 'Why don't all the federal agencies use FastLane?' And I'd just smile, because that was out of my control. That would be nice. Last month, I think, it was in the Washington Post just how inadequate Grants.gov is with all the influx and people have told me about their nightmares. So we had to have everything either/or by submission. Last year we had one that was required and all the rest were either/or except for some programs like post-docs because pre-submissions, Letters of Intent — the forms just did not go. It wasn't worth our doing forms and so we got that waiver for them. But FastLane, again, I think is a good standard

for all. I remember one time, I was somewhere at an NCURA conference and someone from NIH came up to me and said, 'We're not doing anything like FastLane. We're happy with the way we're doing things.' I said, 'And how are you doing things?' He said, 'Well, everything comes in by paper and we scan it in and our system works very well.' I said, 'Fine, you can do anything you want; you don't have to do FastLane.' Evidently he had been getting poned a lot by other attendees saying, 'Well, why don't you use something like FastLane?' They did develop an online system and then they used a lot of Grants.gov and from what I hear now from people is that they've been asking people for paper.

Yost: Very interesting.

Sherman: It is. But I have no control. And I went to a Historically Black conference; and it was in '97 because I had to rush right back because I was part of the team to get the award for FastLane, the three of us received this award, and there were other federal agencies also giving presentations at this predominantly black school, which has since closed. The people there were all very nice; the professors were all very nice. But I was the only one who actually had everyone sit down at the computer. They were all sitting in front of a computer to begin with, I showed them how to use FastLane. All the other federal agencies gave a PowerPoint presentation or some other type of presentation. 'Well, this is what we're going to have in the next six months or year.' Nothing ever materialized. (Laughs.) But the attendees were all from the sponsored research offices and they were very nice. One even invited me to ride in one of their cars back to the hotel

so I didn't have to take the rapid transit. I didn't have a car NSF wouldn't let me have a rental car. I didn't like taking the rapid transit because people, when I got off the end of the line where this university was, people attached to me saying, 'Do you have any money, I need some money to eat.' Finally I gave one of them a dollar and got rid of them. One of the professors saw them and got rid of the people. He walked me to the building I was supposed to go into and I said, 'Bless you.' (Laughs.) It was interesting, some of the places I went to all over the country. Some of the hotels I had to stay in, I don't know how to describe them other than seedy (laughs) really. I thanked God the next morning that I survived. They were bad. There are only three states that I never went to: Wyoming, Iowa, and South Dakota. I went to all the other states and Puerto Rico on business.

Yost: A lot of travel.

Sherman: A lot of travel. I went for a Hispanic conference — a consortium — in Texas and part of it was going to be in Houston so I went to Rice University. I was very happy to go there because Neal Lane was back there and I let them know that he was really the father of FastLane. Without him, and his encouragement as director, and his office's money, we wouldn't be what we are at all, because I don't think the director that I worked for, Information Systems, wanted to spend their money because they had so many other things to spend it on already, and developing something like this, without the money from the director's office and his top down approval, I don't think it would have ever developed the way it was. And I think, too, our ability to have good programmers and migrate to

production two, three times a week, if we had to, that made a difference. Being creative, as I am, with the screens, and being a people person, that made a difference. It's all an attitude. They would tell me that when they would call up about using Grants.gov, if they could finally get someone to talk with them, that some of the people they had there to answer questions didn't understand the system. People would tell me a lot when I'd go to these conferences - things that I didn't want to hear. Even before Grants.gov they would complain about other universities; other agencies, what they were doing. I had to be very careful what I said, and I was. One time when I was at a conference in Pittsburgh talking about what we were going to be doing in FastLane the coming year, the improvements — I always let them know the improvements, and they wanted to hear that at the SRA conferences — and someone asked me, 'Well, with Grants.gov are you going to do away with FastLane?' I said, 'No, you can say when hell freezes over.' (Laughs.) Well, the project leader of Grants.gov and his staff were in the audience and he called NSF up right away wanting to have me reprimanded. They said, 'It was not very wise for you to say that,' and I said, 'I agree with you.' On the plus side, we're still here and we're doing well in helping the people with submissions.

Yost: Do you have an idea what percentage of the submissions come in FastLane versus Grants.gov? It's probably pretty high for FastLane.

Sherman: I would say 99.9 percent, especially now with the encouragement that came out to find an alternate way of submitting proposals other than Grants.gov; for agencies to find a way because Grants.gov is just being overwhelmed. We don't have any required

for Grants.gov. Everything is FastLane. One time, two years ago I got a call from one of our program officers. She had a program and everyone submitted by FastLane except for one. It was an American Indian school and they submitted by Grants.gov. She said, 'Bev, would you' — and I've known her a long time; real sweet woman — she said, 'Would you work with her so that we'll allow her to submit by FastLane.' I said, 'Okay.' So I called this woman up and she said, 'I am the Grants.gov expert on campus.' I said, 'That's nice, however, since the deadline has passed, you cannot resubmit this proposal through Grants.gov. NSF and the program officer are giving you the chance to submit your proposal via FastLane.' She repeated, 'But I am the Grants.gov expert.' I said, 'I will help you submit by FastLane,' I held her hand, all the way through. Then I get this call from her and she said, 'I submitted it. That was wonderful. It was so easy.' I said, 'Thank you. I'm glad everything went well for you.' I had to applaud her because she had been very against using FastLane but tried and succeeded.

I would be at some conference and they would say, 'Oh, I love Grants.gov.' And I would say, 'Do you submit things?' They would reply, 'Oh yes.' And I would say, 'What type of proposal do you submit, just the Word document that you upload?' And they would say, 'Yes.' I would say, 'Well that's a good way of doing it but we want documents you have convert to PDF and upload and do a lot of typing and typing and typing. This is where if you type the name wrong and the document has the name differently, it won't upload.' A lot of problems. So we are encouraging. Now we can openly encourage, 'Do it in FastLane.' No problems. It may be 99.9999 percent— it's hard to say 100 percent because there's always someone who's an expert.

Yost: You've given us a number of great suggestions on who else to talk to. Are there any other people that you can think of who were involved with FastLane, either technically or managerially that we should talk to?

Sherman: There's this fellow, Larry Boswell. He was a programmer for Compuware and was involved in a lot of things. He's now a federal employee working in the Division of Information systems. But Rich Schneider, definitely. You also might call Al Giannangeli at his wine shop. He seems very proud of his part in the beginning of the development of FastLane. The head of the contract after Al, Paul Arnest. Paul is still here at NSF and he was very good to work with, too. Judy Ruttenberg isn't here, but she works for Compuware. She hasn't been assigned yet to any new assignment anywhere. You might want to call her up on the phone. I have her email because her daughter was in the Naval Reserve and was just called up to go to Iraq and she let me know about that.

Yost: What was her role?

Sherman: Judy was working with all of us implementing things. What her really unique ability was — and this was a down side of FastLane that we never did — is for the Post-doc programs, she was able to go in and do all kinds of reports. I've gone in and downloaded all the submissions, but I was never able to do the type of reports that she was able to do. Even now, there's someone that attempts it, but he does not have the sophistication that she had with these reports. The program officers for the Post-docs

just loved it, along with some other programs. She would do these fabulous reports for them from the information in the database. And she'd have them done quickly, too, all the bells and whistles. The reports help them look differently at their proposals and the applicants. We have one program that's called the East Asian Pacific Summer Institute for Graduate Students (EAPSI). The graduate students spend eight weeks in the summer doing research in different Pacific and Asian countries. Her reports were a great asset to that program officer.

Yost: Are there topics or questions that I haven't touched upon today that you feel are important with FastLane?

Sherman: You touched on a lot of topics. Over the years, I worked with a lot of nice people out there in the sponsored research offices and many of them I never met face to face. One time I went to a meeting here and all of a sudden, someone from the back of the room yells out, 'There's Bev Sherman, she's the expert in FastLane, you are just fantastic!' And I said, 'Oh my God! I didn't come here for that.' (Laughs.) It was Craig O'Neill from Michigan State University. He would always call me if he had any questions or problems. Many from the university sponsored research offices would call me. By calling me and getting the correct answers, the process of submitting a proposal on FastLane was less frustrating for them. He called me about one submission that had to be submitted by Grants.gov. In this case I knew the program officer. Craig had tried submitting four times and each time the submission was returned. Because I had worked with him on this problem, I told the program officer about the problem the next day. The

program officer said, ‘Bev, tell him to submit by FastLane today.’ They couldn't submit by Grants.gov. Submissions after the deadline date were not allowed on Grants.gov. There was something amiss. In a way it was a good learning experience for all of us, but it was also totally frustrating. Even though we had frustrations with FastLane, the main frustration was overloading the servers with everyone submitting at the same time. So by having it by time zones, *voila*, we didn't have everyone trying to submit by five p.m. Eastern time. That was a side effect that was a big help in not overloading servers. So once that got in, that helped us immensely.

Yost: In the early days, how often did that occur—overloading the servers?

Sherman: It depended on how many proposals were being submitted and if everyone was going to submit last minute, that made it harder too. The bigger the program was — say they had 500 proposals coming, that's a lot of proposals — it was like going downhill, trying to go uphill in January in Vermont. Not going to happen. We just stumbled onto that by my talking to Jean Feldman, the NSF policy officer, about having local time. That's because I went to Montana State to give some workshops. Audrey Thurlow said to me, ‘Bev, it was so nice to be able to submit 5 PM local time. Couldn't we do it all the time?’ I spoke with Jean Feldman and she said we could try it. Staggering the submission times was a big plus. It helped ease the stress on our servers and certainly took tons of stress off those not living on the East Coast but in Hawaii, Alaska, the mountain and Pacific states. Anyone who's going to work all night on creating the proposal is going to work all night regardless of where they live. Fortunately most colleges and universities

have deadline dates for submitting the proposals to the sponsored research offices for review. Some do start too late. They have to start early. Early's a nasty word. (Laughs.)

Yost: The sponsored projects staff, we interviewed a number of them mentioned you by name and they just had wonderful things to say about you.

Sherman: Thank you. I was always there and they were always very nice to talk to. I remember one university, I think it was the University of Minnesota, once Grants.gov got in and she said, we're not going to use anything but Grants.gov. I didn't say anything but did say, 'That's your decision. It's your decision.' She continued by saying, 'We tell our people not to use FastLane anymore. We're just going to use Grants.gov.' They were all so nice when they called and they knew I wasn't going to blow them off because I never did. I worked extra long hours here and if I took the day off, they would even call me at home (laughs) and I wouldn't blow them off. In fact I felt sorry for them. They were trying their best and they just would run into problems we had never thought of. If we could make a difference in the software, we did. The big thing that we did was having the uploading — the conversion to PDF for the project description or any other file they wanted — online. That made a big difference for both NSF program offices and for the colleges and universities because everything then uploaded correctly. The more they used FastLane, the fewer weird pictures they imported. Before, they could just cut and paste them in and now. With FastLane they had to import them somehow. The formats that they had imported they could be anything. Not everything converted well into PDF. Now, the documents are pretty much standardized. They understand the limits and a lot of the

staff that we started with in '96-'97 have retired. A lot of the staff then didn't even want to touch a computer. Fortunately they've retired. The new people coming to work at NSF and the universities adapted well to having electronic submissions.

EPSCoR didn't want to fund me to give workshops in EPSCoR states for three years. They didn't want to fund me because they felt that everyone knew how to use FastLane. All of a sudden I get an emergency call from EPSCoR to give some training at a conference they were having in Chicago because they have all these new people didn't know anything about it. You're always getting new people in. There are a lot of people who know about FastLane, but you have these new people who are trying to learn how to use FastLane. It's a different way of doing business. They have so much work to do that the established people have gone on maybe to bigger and better jobs in different departments and they just don't have time to teach them. So they have to learn it themselves. There are always new people coming in and new professors coming in. We had a young fellow up at the Science Board Office. He's at Thomas Jefferson High School, in Fairfax County. That is the techie high school for the county. You have to pass certain tests in order to get into it and have high grades. He was a nice young man. He's deciding now, in his senior year — he has to decide by the first of May, which college he's going to — he's down to three. And I showed him how to do FastLane and gave him a password.

When we first started here and I would teach program officers and their staff. I would give them all passwords and show them how to use it. I set up a special account with NSF

being the institution and they could submit all they want. It just sat there. I would get an email saying the proposal was there. Sometimes I still get that because someone's playing around, and that's good, be comfortable with the FastLane system.

I gave this young man one of the passwords from the NSF site to try it out and I said, 'Really, if you have this knowledge when you get into college, maybe you can earn some money on the side helping them. If you have any problems, give me a call. I'll help you.' He said, 'Thanks.' Because if you have questions and you don't get the answers, the frustration grows and that's all negative, and negative energy's not good. So if you know where you can call and get a straight answer on how to fix it, whatever you do, do that. I still get calls even though I've been almost a year at the Science Board on the detail. One university still calls me, 'Can you help us?' And I've cleaned up some messes. I know who to go to here.

Yost: Any other comments?

Sherman: I think that FastLane has become a good standard for proposal submission — for both proposal submission and preparation, and post-submission activities, and post-award activities. Everything is there in one place. We did have, and it's still available, I believe, the ability — this is for at the beginning, when people had trouble getting on the web. They had trouble with connectivity. They'd be cut off if they were on too long, or past a certain time. We created the ability for them to download a program, which Rich Schneider made, of a spreadsheet to do their budget, and I can show it to you over there,

if you want it. And then you would upload it, on the web, into your proposal. The downside is that they had boxes at the top. You can add a new year, you had to use the box. You could not add a row. You had to add a row with a box. It is an Excel format. Once you start getting involved in Excel you can't help yourself but use the bar. But if you use the bar versus the boxes to insert a line or column — you're not supposed to insert a column or a row, because it's the budget format — it's not going to upload. I was at NSF's booth at an AAAS meeting; I have been at their booth for several years at the AAAS Conference in case someone had any FastLane or any program questions, they could ask me about them. This man came up and said, 'I got this SBIR award and they shorted me \$160,000.' I said, 'I can't do anything about that. You've got to talk to the program officer.' 'Oh, I have. But I haven't gotten my money.' I said, 'Well, I'll investigate it for you but that's about all I can do; and I know the director of SBIR, and I happen to know this program officer too. All I can do — I have no influence, this is all on their side — all I can do is look and see what happened on FastLane.' I saw the time he submitted. He said they had submitted close to five p.m. from California. Even though it was a Maryland company, they had submitted from California close to five p.m., and they had everything required in the proposal. On the down side, they had downloaded this spreadsheet, and then they uploaded it. Everything was fine. I always tell people, after you submit the proposal — or before you submit the proposal, print it out and read it. And then after you submit it, print it out and read it. Make sure it's what you want. Afterward, you can update, if you have to, or you can call the program officer and say, 'Something is amiss here.' Well, they must never have done that. They must also have, in their hurry to finish up the budget, used the insert button on Excel versus the buttons

because the special \$160,000 budget item was never there. It was never there. I visited the program officer and said, 'I'm not making any judgments but this is, I feel, what happened.' As I told everyone, after he submitted in June and before he received his award in December, he should have contacted the program officer saying that his budget was short. If he had printed it out after submission, he would have seen in on the cover sheet that the requested amount was not the same as what he was requesting. He kept calling me up about it for quite a while. I told him each time that I have no control over this. This is all in the program office side. I just do the technical side. I just said, 'Thank you.' (Laughs.) And I'm still friends with the program officer. I didn't get involved. Just said I think this is what happened and if it's their decision not to give him the extra money, it's their decision. But I think it was on the PI's side to print out the proposal and check everything, after it's submitted, to make sure everything is there and if it isn't to contact the program officer. Then the program officers can fix it up before the reviewers get assigned to it. I think FastLane is a wonderful example on a painless way to submit. We have integrated. We have an internal system called e-jacket, which has developed over the years. It is not completely where we want it yet, but it's getting there and it's very useable and the program officers and their assistants can get in there and be able to pull in the proposal. We don't have many complaints now. At the beginning we had many complaints about both the FastLane and reviewing FastLane submitted proposals at the panel reviews. They didn't complain much about the panel reviews online either. They were happy about how that went. And they've been happy about the reports. We didn't change the format, at all. It's the same as if it was a paper submission, but it was just so easier to do.

We found that some people were able to access FastLane from their homes. For a while it was very slow, because they were going on slow private systems. The internet has increased a lot in speed. I know when I first had it at home. I had it in my house in 1980. It was slow. But you didn't even notice the slow speed because it was just so wonderful to be able to go online for email and websites. But when PIs would try to do proposals at home they would call up and say how slow everything was- so very slow uploading documents. But that's because of the speed of their provider as compared to the speed of the computers at the universities. Some of the schools complained too. When I would go to colleges and universities — I'm not going to name these schools but they were in the Midwest — people were using these IBM PCs and even the one that I was trying to use. It just didn't work. It was hard to get internet connectivity. So this had to be a frustration at many of the schools. There were some schools, big name schools, when we first started — especially for the Director's Award — that I did the submission, because I felt sorry for them because their internal setup for internet was so bad, they had never thought that access to the internet would become so important. But they were still focused on mainframes and minis and they never thought how the desktop would change things. And then when the internet came, they were never prepared for it-- prepared emotionally or financially. But in that predominantly black school that I was in, outside Atlanta, this was in '97, I was very surprised and pleased with how advanced those people were. They were right on top of things, and even at Tuskegee, when I went there; they were right on top of things. I was there just two years ago. They were on top of things, too. You feel good for them. Their people not only saw things coming but they were able to have enough money

to implement them.

I had MIT calling me all the time. I know all those fellows. And Northeast used to call me and Michigan State. Universities on the West coast would call me too.

Yost: Well, thank you so much, it's been immensely helpful.

Sherman: Well I hope so. If you have any questions you're welcome to call me back.

Yost: I might have follow-up questions.

Sherman: Do follow up. Call anytime. I'm more than happy to help you better understand how FastLane became what it is today – an extremely successful method of submitting and processing NSF's proposals.

Yost: Yes. Thanks again.