

An Interview with

JOSEPH F. BURT

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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.

Joseph Burt was a senior staff member in Administrative Services and gives insight into the human-relations management and policy consequences of FastLane.

Yost: My name is Jeffrey Yost from the University of Minnesota, and I'm here today on July 26, 2011 with Joe Burt at the National Science Foundation. Joe, can you begin by telling me briefly your educational background and your work history before you came to NSF?

Burt: Sure. My educational background is I have an undergraduate degree in accounting and I have a master's in business administration. I have been at the National Science Foundation for nearly 30 years, so my work history prior to that is a bit limited but I did spend some time in the Department of Treasury, a little time in the Department of Defense, and my first job out of college was actually in the private sector working for a chain of department stores working as an internal auditor.

Yost: And when did you come to NSF and what was your initial job title?

Burt: I came to NSF in the early 1980s. My job title was the chief of what was then known as the Property Section of NSF. I had responsibility for overseeing essentially the personal property of the foundation; personal as opposed to real property, which included all furniture, equipment, etc. both in the hands of the National Science Foundation and in the hands of all of its grantees and contractors.

Yost: And then how long were you in that position?

Burt: Well I was only in that job a couple years and then I moved into Space and Facilities Planning, and next thing you know, NSF was beginning to plan a relocation to a new facility, which is actually the one we are currently in. I ended up as the manager of that project, which was about a six year gig from around '88 to '94. And came out of that and spent a little time as a Deputy Director of the Division of Administrative Services in the mid-90's. And then around 1997 or 1998 I went to work in the office of Integrative Activities in the office of the Director of the Foundation, where I did some very different things. I did some business process re-engineering, looking at some of the core business processes of the agency, including the merit review process; managed – as the business manager, at least -- the Major Research Instrumentation Program for about four years; and some other odds and ends that needed to get done. It was the staff office to the Office of the Director, so we kind of did whatever needed to be done.

Yost: From the standpoint of IT infrastructure, was it a real challenge moving from the old facility to this one?

Burt: It was a huge challenge. It was also one of the primary reasons why we entered into the deal to move. The director of the foundation in the late '80s was a fellow named Erich Bloch, who had come to NSF from IBM and really dragged the agency kicking and screaming into the technology age, introduced personal computers to NSF. We were actually in one main facility downtown and had four or five satellite offices because we had simply grown out of the main facility. The building simply didn't have the infrastructure to support advanced, or what would have been at the time, advanced

technologies. And he decided that he wanted a new building, which, back in those days was known as a 'smart building.' So he went to the Administrator of General Services, who is basically the landlord of the federal government and said I need a new headquarters for the National Science Foundation, and that kicked that process off. And that was probably around 1987 that that started. We actually moved into this building that we're in currently, in Arlington, in the fall of '93, is when we actually physically moved. So we went from in 1987 Erich Bloch saying NSF needs a new building, to six years later when we actually moved.

Yost: And in what year was it again that you became Deputy Director of Administrative Services?

Burt: That would have been in '94, right after the move was completed.

Yost: So that's right around the time that the FastLane begins at NSF.

Burt: Sure is; yes.

Yost: Can you discuss your first or initial reaction to the news that FastLane was coming and did you have any role with the [rollout]?

Burt: Well it's interesting. NSF had been talking about how do we make proposals electronic? We'd been talking about that since the late '80s and we even had a

demonstration project back in the late '80s that a fellow named Jerry Stuck ran for us. And it was on people's minds and had been for several years. And I think the advent of the web is what made it, you know, made it a reality for us. And we had an extremely visionary [head] of Information Systems who actually, in the early '90s, became head of Information Resource Management; a woman named Connie McLindon.

Yost: Yes, I interviewed her.

Burt: Connie had the vision for what FastLane could be and how it could work. She saw the potential business application of the web and there were only a few people around – certainly in government – there were only a few people who saw it at that time. And she was one of them. She sort of infected all the rest of us with this vision of how this could be. I remember going out to California and sitting in meetings with executives from Netscape Corporation and people like that. And I was just a hanger-on at the time. I mean I really wasn't a big player for NSF in this whole process but I was supporting Connie on some things so I got dragged along to some of those meetings. She was talking to some of the leading experts in the field at the time, in the early '90s. I mean it was her vision that really kicked off FastLane, to be honest.

Yost: So was this the Mosaic project at Illinois, or was it after?

Burt: Well, yes. I mean this was post the Mosaic project. By the time that we were really getting into it; what's the guy's name? Andreessen was heading Netscape at that time, so he had founded Netscape by then.

Yost: Do you recall the discussions at that meeting?

Burt: Not a lot of it; 'course a lot of it was over my head because it was so technical at the time, but when we talked about practical applications, obviously, first and foremost we were always talking about how do we make proposals electronic? How are we going to get to the point where we can have our PIs submit electronically? And that was really, to me, the heart and soul of FastLane. Everything else we could figure out how to do, if we could figure that out. That was the goal for a number of years. I don't even remember when we finally went fully electronic, but it was probably six, seven years down the road. I would imagine it was probably somewhere around 2000, 2001, something like that. I keep forgetting.

Yost: 2000. It was piloted in the late '90s and became mandatory in October 2000.

Burt: Yeah. And Rita Colwell was the director at the time, I remember. And we gave her a lot of credit for saying okay, this is how you're going to do it from now on. But I don't remember a lot of those discussions, to be honest.

Yost: Can you give me an overview of what administrative services, that office of NSF, handled and where it reported?

Burt: Sure. So it was a division, and it was one of three divisions in the Office of Information and Resource Management at that time. That office was headed by Connie McLindon; the deputy was a fellow named Gerry Glaser; and the head of Administrative Services was Robert Schmitz, and I was his deputy, starting in 1994. It's still the same structure, actually. OIRM hasn't changed. The other two divisions are Human Resources Management, and Information Systems. Administrative Services is basically the back-of-the-house operation for NSF so we managed space, facilities, security; safety and security; you know, mail, warehousing, property control; all that sort of thing that's typical of administrative services in most organizations. Probably the centerpiece of all that; the thing that was most visible to people was space and facilities management; particularly that we had just come off of moving to brand new facilities. I was the deputy in that organization from '94 to sometime in '97.

Yost: You moved from there to Integrative Activities?

Burt: Yes, that Office of Integrative Activities was a brand new office at the time. Office was actually founded early in 1998 and I was one of the original employees of that office. The head of the office at the time was a gentleman by the name of Nat Pitts [?]. Dr. Pitts was a neurobiologist. [The office] was actually the combination of what had been two staff offices into one; and he had been the head of one of those two and was asked to

head the overall group. And then he came to me and asked me to come to work for him in that office. And it was interesting that one of the projects he asked me to oversee was related to FastLane. It was the creation of electronic reporting mechanism for PIs to report their annual and final reports on their grants. And so in 1998 I inherited an agency-wide working group that had been struggling with this for a year or more, and hadn't really made a whole lot of progress. And in February of 1998, Nat turned that over to me. He took the co-chairs who had been heading that group, and he dismissed them -- farmed them out -- and gave the group to me and said I need a working system up and running and accepting project reports from PIs by October of this year. So it was February and he wanted it done in October; or at least he wanted a prototype that worked, in October.

Yost: So that technology [was] being created in DIS?

Burt: Well, I had DIS people on my working group; I had programmers and people like that. But the design of the system came from this agency-wide working group, not from within DIS, or not from DIS interacting with the agency. It was really this working group that I headed that designed the original project reporting systems; and what should be in them, and what they should collect, what should be archived, and so on and so forth. All of that was worked out by this group.

And, I mean, a lot of work had been done. But [they] were stuck in the mud and couldn't get going. And so my job was to go in and say okay, we're not going to worry about that, we're not going to worry about that, but we've got to get [interrupted]

Yost: [what] where were some of the [issues]?

Burt: Right, we've got to get to a prototype. Well, there were constant arguments about what should be included and what shouldn't; how the data should be collected; what level of detail should be reported on the project reports, and so forth. And I was not an expert in any of those areas but my job was to facilitate the process and make it happen; make something happen. We could always fine tune the system later, but we wanted to have a way for reports to be submitted. So we got there. It was a little kludge at first, but it wasn't long before it was accepting all project reports from PIs, agency-wide; probably within the first six months to a year. We got there, so. It became a pretty robust system for a long time and collected an enormous amount of data; an *enormous* amount of data. And we never really -- I don't think -- had a very good way to parse that information; use it in an effective way until we began to have much more sophisticated search engines and could get at that data a lot more easily. But that was years later. It was a fun project, but it only lasted a year and I moved on.

Yost: Now, were there external advisors also, or were [inaudible] entirely internal?

Burt: We didn't have external advisors, per se, that I recall. We did do some testing...

Yost: With a number of program officers?

Burt: We had lots of program officers involved on the team and that we consulted with. We also did go out and do some experiments, as we're bringing up prototypes of the system prior to actually going live with it. We went out [to] some local universities and we had PIs submit some real project reports to see how it worked. We went to Georgetown, and I forget where else; so we did some of that, too. So we actually had some real hands-on experience at the university level that we could take to management here and say it works. You know; so instead of Dr. So-and-so from Such-and-such University, submitted a real project report and here's how it went. And we sat there and looked over his shoulder while he did it at his school, and that kind of thing. We did quite a bit of that to make sure that we really had kicked the tires.

Yost: Accommodating the different areas of science, was that a challenge? And what different programs thought about it?

Burt: You know, I don't really remember that being a big deal. We had some very broad brush questions that we asked so it really didn't get down to differences in disciplines. No, I don't really remember that being a problem. There were a lot of procedural, and legal, and regulatory questions that we struggled with. We had an attorney on the group; we had the head of our grants policy office on the group; and so we struggled with a lot of those questions all through the process; and how are we going to structure this? And you know, going from paper to electronic became a re-engineering process. We had lots of struggles with, well, what can we ask? And what can't we ask? And those kinds of things; it was really more those kinds of issues than it was issues among the disciplines.

Yost: How much [were] paper reports of the past the model; and to what degree did you look at this as an opportunity to perhaps do things in a new way with an electronic version?

Burt: That's a good question. I would say that we tried really hard *not* to recreate the paper product, okay? Really hard not to recreate it. A lot of that thinking had been done before I got into the project, which was really great because they really had come at this as a re-engineering effort, as opposed to let's figure out how to electronify this paper. It wasn't anything like that. I think that the initial project reporting system that we came up with was very different than what was required in the paper world.

Yost: Were there particular technical challenges in getting this system up and running?

Burt: Boy, I'm not sure that's a question I can answer for you, to be honest with you. Now, I had a fellow from DIS named Jim Slough [?] and another guy, who was a contractor at the time, working for DIS, whose name was Paul Arnest [?]. Jim and Paul basically took what we came up with and said okay, here's how it can work in a system; in an electronic system. And we left it to them. They really were the experts so if there were great struggles they found a way to overcome them. You know we weren't burdened with a lot of that. The rest of the team wasn't burdened with a lot of that.

Yost: Do you happen to know if Paul Arnest [?] was with CompuWare?

Burt: That sounds right. I have seen Paul in this building some time in the last few months, so he's still around. He's still somehow connected to NSF so if you wanted to talk to him you might follow up with somebody in DIS and see if they know where he's at. Jim Slough [?], I know, retired a number of years ago and I wouldn't have a clue how to track him down.

Yost: You mentioned Jerry Stuck.

Burt: He's long since retired. I don't know where he is. He did some work for the Federal Demonstration Partnership for a number of years, I know that. But I don't know if he's still hooked up with any of those folks anymore or not. But that might be a place to at least look. Internally within NSF, somebody who's pretty well connected with that group would be Jean Feldman, head of the Policy Office; and maybe Joanna Rohm [?] also, who is the deputy in Office of Budget, Finance and Award Management. There's a couple people you could ask, anyway. There's also a guy in DIS who might have a line on Jerry, too; his name is Bill Altmeyer [?]; he's a branch chief in DIS; or might know somebody who might have a line on Jerry.

Yost: Okay. And one other name that I've just been asking people; for someone involved but no longer here; Carolyn Miller?

Burt: Carolyn Miller, again, she was long-time DIS employee. I would think if there's anybody in the agency who has a clue about how to track her down they'd be in DIS.

Yost: With Research.gov, obviously, there's an increased push to think of ways to present the work of the National Science Foundation to the public, as well as any [inaudible] tools for the research community. When the reporting infrastructure was being developed, was that seen as a new opportunity for collecting the type of information, or collecting it in a way that might be easier to get a handle on?

Burt: At that time – of course you're going back 12, 13 years – but at that time we had a huge debate about these reports. Because obviously if we're going to have this huge electronic database, making it a public database would not be a particularly difficult thing to do. And that was a gigantic debate and all of the concerns about doing that, obviously revolved around not having any control over what the PIs were saying in these reports. How could we possibly edit all these things to make them public, or whatever, which is why we didn't do it for many years; didn't make that information public because of the concerns about what might be said in those reports and the responsibility and liability that NSF might have.

Yost: Did program officers pick one side or the other generally in that debate?

Burt: You know, that's a good question. I guess if they did they probably leaned toward making the information public but I don't think they leaned strongly in that direction.

Many of them, particularly the ones who were on our group and had been in this thing from the beginning, understood the concerns as well because number one, they were reading lots and lots of these things and you could see the kinds of things that, hmm, I don't really want that in a public record. It's not appropriate. And to be asking program officers to then edit these reports was just untenable. There was just no way to do it. So, I would imagine if you had surveyed program officers at the time, you probably would have ended up on the side of making it public, but again, not so strongly that there was this hue and cry to do it.

Yost: Was the timing of the rule that reports had to be in before you could be considered or awarded future funding, was that done at the time the shift was made to electronic reports?

Burt: That had always been; as far as I can recall, that had always been a requirement that you couldn't get future funding.

Yost: On the administrative side [how was] the enforcement of that?

Burt: Well my guess is that what the electronic system did was it made the enforcement a whole lot more uniform. I don't specifically remember that, but that's what you would expect, obviously, would have happened and I'm sure it probably did. Whereas before that it was probably hit and miss, since it was very localized.

Yost: What about the procedure for the program officer followed; how they dealt with reports? Were there any significant differences between the paper-based days and this system?

Burt: Well they still had basically the same responsibility to approve the reports, but it was all done electronically so it was a whole lot easier to do. They got notifications when reports were submitted, from the system, so it was a much more timely process than the paper process, but the requirements were still basically the same.

Yost: Did you have any involvement on the administrative side or advisory side for E-jacket?

Burt: No, not really.

Yost: Do you use the system in your work?

Burt: I occasionally have to approve things in it as a Division Director, when I was a Division Director for a number of years. But other than that, no. I've never really spent a lot of time with E-jacket. I haven't had to.

Yost: And can you remind me what years it was that you were Director of Human Resources?

Burt: Sure. From January of 2003 to October of 2010.

Yost: And prior to that, were you aware of any issues in terms of how Human Resources was changing with the automation of these processes that were coming with E-jacket?

Burt: Yes, without question. We actually did a fairly extensive re-engineering project that NSF undertook, I want to say back in 2001 or 2, which was euphemistically referred to as a business analysis. It ended up being a four-plus year study of all of NSF's major business processes, of our information technology, and of our human resource or human capital processes. We hired a contractor to work with us to conduct this study, and that contractor was Booz Allen Hamilton. I was the project director for that study. Now I had people supporting me in each of those three major areas; Andrea Norris, who is the current director of DIS, worked extensively with us on the IT side. But out of that, on the human capital side, out of that study came a study that we call the Administrative Functions Study. The purpose of it from the human capital standpoint, was to look at how the work of the agency was changing as a result of the automation of all of our business processes and the new business systems, and how that affected the type of people that we needed to be hiring in program offices, you know, the training that they needed to be getting, the education level, the grade level, the whole thing. How they should be managed; looking at the management structure of the program offices and whether that structure was really working or it could be rethought. We actually proposed an entirely new model for the program offices, which has been partially employed, I guess, is the best way to put it; and partially not. There's a whole long story behind that, which I'm

not going to go into, but we, in fact, did put key new management positions in place overseeing program support staff in all of our; or in many of our program offices. I guess five of the seven program directors participated in this thing, ultimately. And, you know, we studied it to death; as we are wont to do here at NSF. But it has been to most observers and most participants, pretty effective. We wish we had been able to completely implement the new design but we weren't able to do that, for a variety of reasons. So I think that the impact of those new business systems was huge; [it] changed not only the way we did business but the way we hired people to do the business in the future.

Yost: Is what you took from the study and implemented and what you didn't something that you'd be willing to discuss?

Burt: I could, but probably not in the time we have today. (Laughs.) It was an extremely involved process; it took several years for us. We had teams working on this across the agency for a very long time; and there are some other folks that you would want to talk to (as well as me) who were really engaged in the day to day oversight of the implementation of that study, if you will. They were folks working for me at the time in Human Resources, and they might actually be able to give you a better view of what we accomplished. I was overseeing it but I was also overseeing everything else that HR was doing.

Yost: [Would you be] willing to give me some of those names?

Burt: Well, the key; the first person; the key person would be Charlene Arietti; A-R-I-E-T-T-I. Charlene was the chief of workforce planning and analysis branch – still is – in HR. And Charlene was also the project manager for the administrative functions study implementation. So she was right there, making it work all along the way. Charlene's on maternity leave right now, and will be for a while. Another really excellent person for you to talk to would be the current head of Human Resource Management, which is Judy Sunley. S-U-N-L-E-Y. And Judy was very much engaged at the time when we were doing this. When the implementation started, Judy was the Deputy Head of the Directorate for Math and Physical Sciences and was a big proponent of moving to the Administrative Functions Model [AFM]. So she could give you a lot of background, probably in great detail, about how it worked, how it improved the way in which we process work within the agency, and so forth. She'd be great at that. There's probably a bunch of other people. Let me see. Sonya Mallinoff. Sonya is in Directorate of Biological Sciences, in the front office in that directorate, and was instrumental in the implementation of the AFM. Marge Cavanaugh in geosciences; Marge is the Assistant Director in Geosciences. Those are a few people that could really talk to you in great detail about the impact that the model had on the work of the program offices, and again, how it changed the work. Or maybe the better way of putting it, how the work and the automation of the work changed the way in which we looked at staff, and how we managed them, how we hired them, and all that sort of thing.

Yost: Is there a way to summarize the model or is it too encompassing and complex?

Burt: Well, yes. First of all, the program support staff, if you go back to the early days of NSF, program support staff were almost all individually supervised. Every Program Officer had a secretary -- or a support person -- right? And so you had every Program Officer supervising one person, which in the government is idiotic because in the federal government the requirements that supervisors have to go through in order to be supervisors are actually pretty extensive. It was actually Erich Bloch who changed that, so that changed back in the late '80s. But we went from that all the way to the Administrative Functions Model, which was really a model of a support staff headed by a Program Support Manager reporting to the Division Director. So instead of all the program support staff reporting to say the Deputy Division Director, or the Division Director, we created this program. We created a new management decision, okay? And we professionalized that. Sometimes what you had was the admin support staff in a division reporting officially to the Division Director and unofficially to the Administrative Officer. You know, one of whom was not really capable of handling that job and the other of whom wasn't really paying attention, okay? So part of that was to change the management structure. We actually posited the idea that all of the program support staff for a directorate could come under the control of a manager at the directorate level so that it would become a whole lot easier to juggle support staff from division to division, within a directorate, as needed to meet work flow. That one never got off the ground. There was a whole lot of feathers ruffled over that. If you just looked at it just purely from a work flow management standpoint, it made a lot of sense. But there were a lot of cultural and other issues that came into play there. But the Program

Support Manager position was created and in, I think, five directorates, it exists today. And we also had a directorate-level person overseeing program support who we viewed as essentially, on par with the Division Directors and Deputy Division Directors, but the Administrative Manager, if you will, who still had the role of looking at all of the divisions within the directorate and helping to try to balance that work load, and that sort of thing.

Probably the single big thing that we never really got implemented the way that we wanted was we created a whole new three-level structure for program support staff. That was going to provide an opportunity for some folks within the current cadre of program support staff to have opportunities for real advancement and also opportunities for much more extensive training and development. And it was also going to, over time, help us bring in fresh talent at a higher performance level. But that never; that didn't materialize, that part of the model, which was really the heart and soul of the model to begin with, from my perspective. The fact that we never got to implement that is just a crying shame. But, you know, factors got in the way of that so those are things that I prefer not to discuss.

Yost: Okay.

Burt: But anyway, that's the model, in a nutshell. The genesis of it was we have a new way of conducting business, we need to unburden Program Officers from administrative work load. That was one thing which was going to require a higher level of

administrative support. And then second, because we have these electronic systems we have all these old paper processes that no longer are relevant, and how do we move the people who were doing these paper processes to the electronic world? Or, if necessary, move them out and bring in people with the right skill set to handle the electronic work. And that was really what the project was all about, but we also made a commitment that no one was going to lose a job. We weren't going to RIF people or anything like that in order to move to the new model. We would do it over time through attrition and training and development and so forth. And the bottom line is we had, and have, a lot of really good and talented people in our program support staff, which is where I'm getting an opportunity, because opportunities hadn't been created for them.

Yost: Can you talk about how the training infrastructure changed?

Burt: Sure. We created a whole training curriculum for program support as part of the implementation of the administrative functions model. And we worked closely with division directors, with program officers, with program support staff to design a complete curriculum. First we had management curriculum, obviously, and we insisted that our program support managers, and we had a second position that we created in each division called an Operations Specialist, which was really the sort of budget and human resource person, go-to person for each division. And we put those folks through a very rigorous training and development program that was designed for them. And then we began the process of developing the same kind of programming for the program support staff for those three-level positions that we envisioned. We just never got there. Now we still have

a lot of excellent new training development that came to pass as a result of that, that people are still using. You can talk to the folks at the academy in HR about all of that. But we were never able actually to turn it into a curriculum that a person would be required to go through in order to reach a certain position; which is what we envisioned.

Yost: What about the panels and the review process; have you had any involvement with administrating activities there?

Burt: Not a lot. I got involved a little. When I was sort of overseeing the business end of a major research implementation program, I got involved at some level then. I did get to run a Committee of Visitors for the MRI Program while I was overseeing it, which was interesting.

Yost: MRI?

Burt: Major Research Instrumentation Program. That's one of NSF's programs; it's actually a cross-directorate program that, for all intents and purposes, is designed to provide money for instrumentation based on proposals for 'this is what we are going to do if we get it.' And it's a huge program, actually. I'm not even sure what the budget is up to, but it was somewhere in the neighborhood of between \$50 and \$100 million when I was managing it, and that was 10 years ago, so it's much larger now. But again, it's an agency-wide program and there was a coordinating committee, so there were program officers in all the directorates who sat on this coordinating committee that I chaired, to

run the programs. But anyway, so I learned a lot. That was really my first opportunity to really dig into program management at the foundation. I learned a heck of a lot about how it was done, and you know, why things were done the way they were done and so forth. I worked on an 18-month effort, while I was up in OIA, that resulted in NSF meeting what were its proposal dwell time goals. There was a point at which the agency had a long-standing goal that it had never reached; which was to process 70 percent of all our proposals within six months of receipt; so to get from receipt to decision in six months. And the Director and Deputy Director of the agency at the time decided that they wanted to make this a priority and they handed it to OIA. They handed it to Nat, who handed it to me and said okay, go figure this out. So, I literally spent 18 months looking at the data, evaluating steps of the process, what could be done to streamline in various places. There were some people who were doing it, so I had the opportunity to look at best practices for streamlining a lot of merit review processes.

Yost: What were some of those best practices?

Burt: Well, now you see, you're going back a long time now. I try to remember some of the details. Nothing's coming to me off the top of my head, I'm sorry; it's been a long time. But a lot of what I did was basically go around and sit with division directors in whichever division at the agency, and for all intents and purposes extract commitments from them to relook at their processes or adjust here, or adjust there, to get to the six-month window. And if I sit here long enough, some of those things will come back; but they're not right now, sorry.

Yost: I understand. What about Research.gov?

Burt: No, nothing to do with that.

Yost: And, finally, are there any topics I haven't brought up, questions I haven't asked that you think are useful to understanding FastLane, E-jacket, and more broadly, the IT infrastructure of the foundation?

Burt: Well I don't know how much you're interested in; I don't know how to say this. There was tremendous resistance to FastLane both internally and in the community early on. I remember when Dr. Colwell got a letter from 50 eminent geoscientists -- or whoever they were, you know -- who were lambasting the whole idea of FastLane. So there was an enormous amount of pressure that I think, for whatever reasons, was being put on the agency to back away from a march toward complete electronic processing. And to the credit of the people who were heading the agency at that time, they didn't back away because they obviously knew that this was the thing to do, the right thing to do. Since I've been here for such a long time and been involved with this thing on and off for a number of years, what I saw was the agency going from that position where we were standing alone doing this, you know, and everyone around us was screaming no, no, you can't do it; it's too fast; it's too much; it's this; it's that; don't go there. And doing it anyway. To a few years down the road people basically saying we couldn't live without FastLane. And, even more importantly, saying to other agencies, who were in the same

business as NSF, why don't you do it like FastLane does it? So we came sort of full circle from this amazing resistance to the process, beyond acceptance, to we couldn't live without you. Or without this system; this process. I mean it was kind of funny to watch; it was essentially the same people, you know, who were here saying no no no no; and here saying oh please don't take it away. (Laughs.) And Nat [Dr. Nat Pitts?] really kind of enjoyed watching that happen. I mean, it happened over a pretty broad span of years but it was kind of fun seeing that culture change.

Yost: You mentioned some scientists in the research community, what about program officers? Were they sort of generally [interrupted]

Burt: Well, early on days where FastLane was in development you had a cadre of old timers here, if you want to look at it that way. One of my favorites was a guy who I got to be friends with – he and I used to run together. He was a mathematician and he kept, literally, a giant ledger book that he had to [pffff] blow the dust out of it, and in it was recorded every single proposal he had ever reviewed on this huge ledger with a fountain pen. And that was in the '80s or early '90s, you know? So you had some real old school people here who, you know, just couldn't understand how this thing was going to help them. But that was matter of just; you know as you brought in new blood, and new program officers came in as rotators, or whatever. They came in and they said wow, this is great. And so you had this turning that occurred that I think was a natural process. You did have some resistance internally and you had some of those folks stirring up the

people on the outside, who are the ones writing the director. That was much more easy to overcome, I think, than the pressure from the outside.

Yost: You mention other agencies; were you ever involved in any interagency groups?

Burt: Well only to the extent that I participated in some large conferences that brought together the Federal Demonstration Partnership, and groups like that. And there would always be folks there from FastLane; there would be folks there from NIH who were, you know, trying to hang onto our coattails when it came to what we were doing electronically and really weren't able to. So it became very apparent that NSF was light years ahead of everybody else in the government research community as far as how we were developing systems for business process.

Yost: In terms of electronic reporting, was that something that NSF led the way with, and was there interest of other agencies?

Burt: Yes. It was something that we lead the way with. The interest of other agencies came a few years down the road, and I wasn't really involved anymore with that. I think initially having people just say we're not close. Now that I think about that right now, that's pretty much what we heard. And when I was working in OIA – this would have been right when we were first accepting proposals electronically – we had this issue of requiring a signature page that was hard copy. So we would take the whole proposal electronically through FastLane but then insist that the institution submit a signature page

in hard copy with original signatures for legal reasons. So this was when I was managing the Major Research Instrumentation Program. My boss and I were sitting around one day thinking about how stupid that was, and how incredibly kludge it was when it got here, trying to match it all up, and you know. And we said well, why couldn't we have a scanned signature page be a part of the electronic proposal as a PDF file? And so we checked that out with the lawyers and they said, sure; that the original signature page could be kept at the university. So we decided to make that a requirement for the annual solicitation one year, for the Major Research Instrumentation Program. So just one program, we were going to say to anyone who wanted to submit to the MRI program that you had to submit your signature page as a PDF file attachment to the proposal in FastLane. And you would have thought that we had insisted that they all send in their first born children. I mean, the pain and anguish that this caused was just phenomenal. Scanners were like 50 bucks, or a hundred bucks, you know? I'm sorry, but we're talking about Cornell, you know, I think you can afford a scanner. Or Minnesota, or whatever, you know? I think you're going to be handle the cost of a scanner in your Sponsored Research Office; I don't think it's going to that big of a deal, right? Okay, so just do it. If you want to play in the MRI program and you want to get millions of dollars for instrumentation, then you need to do this. And even our own people at NSF were out undermining what we were trying to do with this program. But we had gone to the [inaudible] agency's deputy director and Chief Operating Office about this. He basically said this is exactly the kind of thing we need to be doing; just do it and I'll back you. And he did; to his credit, he backed us a couple of different times when we needed it. And it was interesting because what happened was the IT people immediately came together

almost in panic and said okay, we need to get to electronic signature, how do we do it? And within six months we had figured it out; and it was a non-issue when the entire agency went to an electronic signature process for proposals. But no one was pushing that until we did this experiment with the MRI program where we basically said we don't want any more paper.

Yost: Do you recall, if there was discussion about EPSCoR schools and historically black colleges and universities, and how requirements might have differential impact?

Burt: Oh, all the time. All the time that was being discussed, yes. And it was really interesting because when we did this little experiment with the MRI program, those were the schools that said okay, no problem. It was the big research institutions that gave us all the flak. I don't know why; but we dealt with a lot of minority institutions; we dealt with a lot of EPSCoR schools in the MRI program, and I don't ever remember one of them saying that's a problem. Whatever you need; no big deal. We know where we can get a scanner at whatever the computer supply store was in their neighborhood; it's not that tough; we can do this. And they were more than prepared to do it. But all the flak came from the big sponsored research offices. And – it was a long time ago -- but I'm guessing that a lot of that had to do with that they foresaw what was coming; you know; they were resisting what they were afraid was coming down the road as opposed to just having to do this for this one program. But, once we implemented that electronic signature process, it certainly became a non-issue.

Yost: Okay, well thank you very much. This has been very helpful.

Burt: I hope so. (Laughs.)