American Medical Informatics Association Nursing Informatics History project

Purpose

The overall purpose of the Nursing Informatics History Project is to document and preserve the history of nursing informatics.

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Elizabeth Weiner

Introduction: Betsy Weiner, PhD, RN-BC FAAN

Senior Associate Dean for Educational Informatics

at the Vanderbilt University School of Nursing

Interviewer: Definition of Nursing Informatics?

Elizabeth Weiner: I have the classic Corcoran and Graves definition of the translation of data and information into knowledge. I frequently tell my students that informatics is the only thing that saves us from drowning in either the data or the information.

Interviewer: Career – how you started; transition, et al?

Elizabeth Weiner: I changed my major eight times as an undergraduate nursing student before I landed in nursing and I knew from the first moment it was a great fit for me. I also was in academe and if I wanted to continue to stay in academe I would have to go back to school and get a doctorate. I'd gotten my master's at the University of Cincinnati, so in the early '80s I went back to school and got my PhD.

My PhD is in Higher Education and Social and Philosophical Studies. What a long degree. At that time there weren't that many doctoral programs in nursing.

Interviewer: How did you first come into informatics; were you a clinical nurse?

Elizabeth Weiner: I started out as a post-op surgical nurse for a number of years and did some ICU work. But when I went back for my master's degree and continued to do that kind of practice, I felt compelled to teach students how to do things. So, when I went back for my doctorate, those were the days where there were still cards. So my data for my dissertation were a large stack of cards. I kept thinking if someone mugs me, "don't take my cards. You can have my credit cards, my purse, but not my data."

When I went back to the University of Cincinnati, after my degree, I started to teach clinical students again and something had happened in the early '80s. That was that the diagnostic related groupings to the extent that the patients I was taking my students in to see had many more tubes. They were more complex. They would go out in the hallway just scared to death and I felt like I was going to have to give them an engraved invitation to go in to take care of the patients. But what they said to me was, "I don't think I know anything, Dr. Weiner. I don't think I know enough."

I would talk with them about the health assessment of healthy people, the kinds of things they really had learned as a sophomore and convinced them to go in. I then went in to see my dean, Jeannie Spiro who later became my mentor. At that time, I was just beginning to realize that she and I had something special. I told her, "Something's happened while I've been off getting my doctorate and I think the patients have gotten sicker and our students are catching up. I think I need to start developing some clinical simulation." Most people start with computer assisted instruction but this tells you how crazy I was. I immediately jumped in to doing interactive video disk programs on 12-inch video disks. That gave students the opportunity to make decisions without me stopping them. So that was my initial contribution and Jeanie gave me enough rope to either hang myself or do something great. I hope she thinks I did something great.

Interviewer: Career and your major contribution?

Elizabeth Weiner: I think by far my greatest contribution has been in the multi-media development of clinical simulations. I'm still doing that; it's just over time the content has changed. If anyone had told me five years ago I would be having $2 million worth of grants to develop bioterrorism types of programs, I would say no. That wouldn't be me. But I have this gift for taking content that other people know and translating that so that technology enhances the delivery of that. So that's my current work. It's very, very important because most of our nurses have not had that kind of content – even relating to natural disasters and, as you know, those are on the rise as well.

We surveyed all the nursing programs across the United States and there were only teaching about four hour worth of content.

Interviewer: Key people you collaborated with, pioneers?

Elizabeth Weiner: I think by far the pioneers and the people who helped me the most were Sue Sparks from the National Library of Medicine who has since been retired and Maryann Rizzolo. Maryann and I started doing video disk simulations about the same time. We would do the circa of all the different programs. My biggest selling program at that time was the Labor and Delivery program, which made a lot of money in sales for Health Sciences Consortium and the royalties went back to the University of Cincinnati for us to use with other students. I think those two were very influential because on those days that I kept thinking, "Am I nuts?" "Is this hard?" we would tease ourselves about being pioneers. We would go out and have a "pioneer" drink at some conferences.

Later, those two were to sponsor me for the American Academy of Nursing and the fact that they were willing to do that – whether I made it in or not – was very, very special to me.

Interviewer: In field if NI, are there highlights that have moved the field along.

Elizabeth Weiner: The highlights that might have moved the field along, I think began to center around the early SCAMC meetings. I can recall coming to my first SCAMC meeting here in this hotel. We're not sure exactly what year it was, but it was in the early '80s. Part of what I remember the most was that Gary Hales used to have this "Bop Till You Drop" party. I'd take a cab with a few other people who were also going to the same place but I didn't know them. Carol Hutchins was one of those; Judith Ronald was the other. Once I got to the "Bop Till You Drop" party, I saw a group of nurses that later I was also to see in a wonderful meeting where we had so many people they had to push the walls back. They had no idea that many nurses were interested in the informatics side of things.

I think we were instrumental to turning SCAMC more outward and helping those of us who are in this arena in nursing have a voice and a say about it. It's been wonderful to watch over the years the growth of that.

Interviewer: Describe evolution; surprises; evolution, et al?

Elizabeth Weiner: I really took a side road in my career and ran academic computing for the University of Cincinnati, which some people might argue was not really informatics. I thought of it as informatics because I was developing tools. We developed something called Classware, which is the same sort of thing as Blackboard or WebCT right now for our faculty. I felt that to give faculty the kinds of tools that they can better pull in the research and practice components to what they are trying to teach, the better off it would be.

So, I was dealing with 40,000 email accounts and counseling about inappropriate web pages for about five years. I could sense I was getting farther and farther away from my nursing roots and being the age I was, I thought, "I better rethink the last part of my career." About the same time I did that, I got the call from Dean Welch at Vanderbilt and decided I would go back to my roots. The opportunity to work with other medical informaticists at Vanderbilt – I couldn't find anything better than that.

I had expected our nursing informatics majors across the country to grow faster during that period of time and I was rather surprised to see that we were still slow in getting through that particular hurdle. I'm not sure why we had a hurdle but I think part of it was there weren't that many nursing informaticists to start with. We were homegrown, if you will, and learned things on the fly and took a lot of continuing education classes to get where we were. That particular aspect of it surprised me – that it had been a bit slower.

But, on the other hand, I was very happy to see other new nursing informatics leaders emerging. It's so satisfying to watch other people's careers as they fly through this new thing.

Interviewer: You guiding principles, vision?

Elizabeth Weiner: I like Barbra Streisand's comment about vision. A vision's not a vision if it's only in your head. From my perspective, I've always wanted to set goals that annually had one that seemed impossible to reach or clearly was out there on the cutting edge. I don't mind being on the cutting edge some of the time but you have to keep up the maintenance side particularly in the whole informatics arena where you know – it's like you're not thirsty until the water's turned off – and if technology's not working, that's when people get very angry and they personalize it onto the people who are trying to support it.

I think my vision, which is pushing us ahead always to something that's cutting edge and helping us to move a little faster than probably people are comfortable with, has been important to me.

Interviewer: You enjoy pushing the envelope?

Elizabeth Weiner: I would say that I do enjoy pushing the envelope. But I think one difference is that I'm out there pushing with everybody else. If we fail, we fail together. And, if we do great things, we do great things together. I know I could never have grown in my career had I not had the support of a wonderful team of people.

Interviewer: Talk about your work with students, state of educating nursing informatics.

Elizabeth Weiner: I think in terms of the current education of nursing informatics students is what I've learned recently is that many people who wanted to be a nurse a few years back and picked a different career are now looking at the opportunities that nursing informatics offer and want to become a nurse. We have a substantial number of interested applicants who are having to back up and get their baccalaureate degree. At Vanderbilt we have a bridge program that is a baccalaureate-equivalent that prepares them to be able to go straight into a master's degree. What people would say to me is, "I really had an interest in nursing but none of the specialties were right up my alley. And the more I hear about the job possibilities for nursing informaticists and the strong role that technology plays, I think this might just be right for me." I think it's opening up job prospects and I think

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nurses are in the best position to have this holistic picture of things. It reminds me of when I was leading academic computing. People would say, "What is a nurse doing running this academic side of computing?" My comment would be, Well why not a nurse? We're wonderful in systems analysis; we're great at getting projects done; we're organized; we don't take no for an answer; and for that stint in my career, I certainly enjoyed that. I enjoy watching the students who are coming in enthusiastic about something that feels so right to them. And I'm just sad that we haven't had that opportunity for the last 15 years, in fact, to really move these students to the place where we can use them. Clearly, there are lots of job opportunities out there.

Interviewer: Is the field at a break-open point? Where is the field?

Elizabeth Weiner: I think the field of nursing informatics is primarily at the adolescent phase. I honestly think that the more hospitals that bring in the electronic medical records, which we've talked about having for the longest time – you can just look at the ads in the paper. They're looking for nurses to help run those products. At Vanderbilt we have a Biomedical Informatics department as well as our School of Nursing master's degree and we talk about the differences in those two degrees. On the nursing side, at the master's level with nursing informatics, we primarily are looking for wonderful change agents and those project directors who can really understand the clientele and the nursing side of things because they've been a nurse. I think those jobs are everywhere. We're going to start to rise to that occasion. And I can see this major begin to get the respect that I certainly think has been its due long before now.

Interviewer: Let's talk about that respect – and put it in context. How did people respond early on?

Elizabeth Weiner: The current climate at the time I decided – and I started by just pulling technology into what I was doing. I began to realize along with other pioneers that this really was more of a transformational sort of thing. It wasn't just technology. I have trouble explaining that to people – why is it different? I think they got used to me wanting to do something different and it was like, "Oh, there goes Betsy again and this idea." But they weren't

laughing at me; they weren't angry at me. They were just kind of puzzled as to what I was doing. And I can remember one faculty I worked so hard to get her to pull from videodisk programs into her teaching. She had been a former nun – very close to retirement. My biggest compliment was walking down the hallway and I heard her using one of the IBM Infowindow units in the classroom. And when she retired, she had a really nice paragraph about our interactions and how I had helped change the way that she taught. So, I think there was a respect that I was a change agent, but they were happy someone else was doing it.

Interviewer: Lessons learned from your career?

Elizabeth Weiner: Collaboration is the key. I could not have done any of my projects had I not had a great project team. The vision part is very, very important. Have wonderful dreams. But, also figure out how to work toward that dream. Even if people think that you are a little on the crazy side or have lofty goals, just keep plugging away. At some point, you'll be able to show them that what you dreamed about has come to reality. I think there is great satisfaction in that. When I was hired at Vanderbilt, I said to Colleen, "This place is going to look different." And in five years, we've grown from five people up to 15 just in the informatics area and opened up a whole new Nursing Informatics Center.

My comments to people who are just starting out in this area would be, "Always collaborate but always keep that vision right out there in front of you. Don't give up. Sometimes you do have to persevere.

Interviewer: Where is the field going?

Elizabeth Weiner: I think the filed is going to explode. When we think about informatics we usually think about it only on the clinical informatics side. My particular job title has "educational informatics" involved in it and that's a different term that not everybody in informatics agrees with. But that doesn't bother me either. My job is to take the academic, the practice, and the research missions and make sure that informatics is a thread across all of

those things. My vision is that every graduate we turn out -- not necessarily nursing informatics majors – but the family nurse practitioners, the pediatric nurse practitioners, all of them have the most state-of-the art informatics skills so that when they go out on the practice side, which may be in a hospital, maybe in a primary care setting, maybe in academe, that they have the best we have to offer at that time and they're committed to following this knowledge quest. They're the ones who have to make sense out of the information.

Interviewer: Can you restate what you just said about your vision?

Elizabeth Weiner: My vision for all nurses, regardless of what their specialty is – I'm not just talking about informatics students – pediatric nurse practitioners, family nurse practitioners – is that they graduate with the best informatics skills so that they can make sense out of all this data and information. If we're graduating them without these skills, we're doing then a grave disservice. I can't hang around them every day that they keep pitching forward in this knowledge quest, but we can give them the tools so they will keep fighting to figure out what that knowledge base is.

Interviewer: Are nurses getting what they need in schools around the country?

Elizabeth Weiner: Not every program has the luxury of having four informatics professors like we do. What's happening is that we're also having to look for new nursing faculty in general because of those of us who are aging. We have to replace ourselves. As we do that, we have to make sure whatever field that faculty member is in, he or she has got to learn how to use the informatics tools at the same time. So any class that we teach – and we do run a summer institute to help those people who want to become faculty to learn to do those things. Unfortunately, not every program has those kinds of people. Those graduates are going to suffer and find it a bit harder. It's a long process. One of the other things I like about having students in all these specialties – they go out across the country to their preceptors and they'll pull their PDA out of their pocket and look up some drug value or look up some answer to a question. The preceptor goes, "What is that?" And so the

preceptor ends up learning from the student at the same time. That model is going to continue to grow. As long as we all recognize we have to keep learning, it doesn't matter where we are in our career. There's always something to learn.

Interviewer: What do nurses bring to the table of this vast field?

Elizabeth Weiner: Sometimes I think it's hard for us to verbalize nursing and the phenomena of concern to nursing. But I believe we can still play an interdisciplinary role in looking at situations that yet have a very unique vision that's nursing. It's the nursing aspect of data. You can work with an interdisciplinary team but there's going to be a part of it that we pull out that we know contributes back to how we practice.

Interviewer: Change agents vs. focus on technology.

Elizabeth Weiner: We focus on being a change agent primarily at the master's level of the nursing informatics program. We've also learned a lot from technology-implementation projects that did not work well. One of the biggest reason they didn't work well is they didn't have a change agent behind them. They didn't have someone who understood the organizational barriers and how to get around those -- who could stand back and observe but also collect data at that same time. In watching this emerge at Vanderbilt, Dr. Nancy Lorenz has been phenomenal in pushing nurses to be change agents and to be aware. She's been a wonderful role model for the nurses there to think outside the box. I really think our first successful graduates from nursing informatics programs – regardless of the jobs they took – would tell you that they were all change agents.

Interviewer: What does it take to collaborate across all the disciplines?

Elizabeth Weiner: I think in terms of multi-disciplinary work, each person on the team has to want to be working with someone else. It can't necessarily be something dictated from the top. But it certainly helps if upper leadership is respectful of that. Sometimes it's easy for us to have professional barriers – whether I work on a grant from someone in the medical center or outside the medical center – there are hurdles that you have to do to get those things

okayed by people. In terms of multidisciplinary, the understanding of what role each person can play is also critical. I honestly believe we're getting to get more respect on our interdisciplinary teams and that's only been because of the productive capabilities of the people who have been playing that role. To have a holistic view from an informatics perspective is important and I do believe that we don't need to do nursing informatics standing completely alone and separate from any of the other professions. If we do, we're going to fail. And, in that way, we'll never gain their respect. But we're starting to do that because the qualities nurses bring to that agenda are quite important.

Interviewer: Talk about your IRSA grant.

Elizabeth Weiner: There are training grants that had for a vast number of years. We haven't had a focus on informatics because the reviewers weren't really into informatics. Last year, we wrote a grant and had a score in the low 90s. But we didn't get funding. So I went to my dean and said, "I feel like I just got an A on the paper but everyone else got an A+." I tried to attribute it to the thought that maybe I didn't explain Informatics well enough. So that those people who didn't have the same passion for it that I did could understand it. So we made a few minor revisions and resubmitted. This time it worked, so we're threading informatics competencies across all our programs, including the doctoral level and working with our faculty so that we, again, would be a state-of-the art program. But I know some other programs in the country got some grants this year and I can't help but think if we keep inundating them with requests, eventually they'll get it. What we're trying to say is, yes, we're specialty, but we also have important content for other specialties to have.

Elizabeth Weiner: What have I enjoyed most about my career? I would have to say it would be not only the innovation but working with people. When I changed my major eight times as an undergraduate, the theme was, "but you won't get to work with people." So when I landed in nursing, that's what I wanted to do the most. I'm not doing something in isolation, but I'm doing it with wonderful other people. That's been my joy.

Interviewer: Response to: it's just technology; it's not personal?

Elizabeth Weiner: For people who ask me whether nursing informatics is an isolational thing – no way. If it were, it won't be successful. It has to be something that touches other people in the way they practice. You can't do that sitting in a basement room by yourself just touching technology. It's making things more meaningful so we have something to contribute to the knowledge base in nursing. That's what's makes nursing informatics unique.

Interviewer: Do you see the grants spreading across the country? Growing recognition among all of nursing?

Elizabeth Weiner: As far as the other specialties are concerned, the more presentations and the more publications they see about the possible enhancements to their specialty, the more open they are to accepting informatics. When I talk about these nursing informatics grants, part of what makes them unique is that we're not just within the nursing informatics specialty. We're reaching out and touching all the other specialties in some way. And, they're beginning to appreciate what we bring to their specialty. I think it's just a matter of time as we see more examples of those kinds of things that we make a difference for them as well.

Interviewer: Informatics is changing medicine; how is it changing nursing?

Elizabeth Weiner: We like to think it's changing nursing because we've been working for years on vocabulary. That's not my area of expertise but I have a healthy respect for those people who love to do that work. We're having to think in ways that we aren't just communicating with ourselves. Terminology is one aspect of that, but the ability to contribute toward the evidence base for nursing as well as medicine and all of health care. You can't do that without informatics. I think that's the other reason we're becoming more in the spotlight, I believe, because we have the ability to provide that data so that we can start turning it into information and knowledge and changing the way we practice.

Interviewer: An ah-ha moment? That this matters; who I am, etc.?

Elizabeth Weiner: I'm not sure I had a real ah-ha moment. I'm really a nursing informaticist. It sort of evolved over time. When I started to do the simulations, we were not talking with the word informatics very well. But certainly I could see students interact with the clinical simulations I was developing and I would get feedback from them about that. I remember one student looking at me and, what he said, is, "I don't know how I'm going to figure out what I need to learn to get an A on the test because you've given me all these choices in the simulation." I tried to convince him that's the real world and that sort of thing and finally he says, "But Dr. Weiner, you're making me think." My answer to him was I don't think I've had a better compliment as a faculty member than I made a student think. That's what we were all about. It wasn't until the dialog began to happen – primarily after the Corcoran and Graves article that, yes, what I was doing was a kind of informatics. I haven't that idea to the rest of my nursing colleagues, but I think the more we touch other specialties within nursing, the more they might be able to grasp what my vision is to shape the education so that it has that unique informatics aspect.

Interviewer: Nurses and public policy? The natural dialog about the electronic health record. Status at Vanderbilt; status over all?

Elizabeth Weiner: We as nurses have always wanted to be a part of public health policy. But we haven't been successful in doing that. Part of that is we need to sell what our skill set is in aiding that particular agenda. A good example would be Dr. Mark Frisse at Vanderbilt does have one of the grants to start a RIO. It happens to be in the western part of the state instead of within Nashville. So, there are politics associated with that but as soon as I heard he was going to start a RIO, I made an appointment and took all my informatics faculty to sit down and chat with him – to say, you know, nurses can help do this and nurses can help do that. And he and I began to engage in a dialog that was so fast the other two people couldn't get a word in edgewise. What was happening is we can, that fit. There's a part in his project where nurses are going to be instrumental. And we were able to point out some nursing leaders we knew in the western side of the state that – rather than coming in as an outsider and saying, "I'm going to give you a RIO," we're

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going to work together to get a RIO. And those nurses know that area of the country very well and can certainly contribute to that. I'm looking forward to having clinical placements as part of that RIO grant so that we can continue to look at that model and, again, take some of those health policy applications up to the doctoral level in our program so we can begin to explore how nursing is contributing toward that particular vision as well.

One other thing I'd like to say that you haven't ask me – and it's probably odd that I would suggest it – David Brailer, after Katrina, set up conference calls to put together Katrina.org and there were nurses on that call.

Interviewer:　　　　Let's talk about the larger picture of health IT, emergency response, nurses. How are nurses being involved in those larger issues?

Elizabeth Weiner:　As far as I'm concerned personally I'm at that intersection of nursing informatics and emergency planning and response. It's an interesting place to be and when I first landed there developing educational modules along these lines, I wasn't sure there was a role outside of that at that point in time. But what's happened because I've been doing things with the CDC – I have an ARC grant, I have a HRSA grant – you get lots of list serves about different things. In Katrina, I did help set up a medical warehouse and did the informatics side of what we had and what we were shipping out. That was kind of an on-the-job training thing. But I also got notification that David Brailer was setting up this unique group that had not only the public sector, but the private sector of IT leadership and informaticists to try to figure out how they could contribute to the response after Hurricane Katrina. I've never been part of such a unique, daily conference-call meeting. Things happened. Under normal circumstances we weren't able to move that fast. But in the interest in knowing that all of these evacuees were going to other places. Many, if they had a health record, had been flooded or blown away. They're showing up in Red Cross shelters that traditionally have not provided health care to them. They've done the general food, clothing, shelter routine. But many of our Medical Reserve Corps units that were preparing for local disasters were able to go into some of those Red Cross shelters

and do a head-to-toe assessment, for example, because maybe they'd never had one before. But the Katrinahealth.org site grew out of the work of these people with David Braylor. I think that's a fascinating application of how bureaucracy can sometimes stand back and really make a difference. And I attribute that primarily to his leadership.

End of Interview

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