

ROUGH EDITED COPY

RIT-NTID
REPORT ON THE DEAF AND HARD-OF-HEARING CYBER-COMMUNITY SUMMIT
PRESENTERS: RICHARD LADNER, E. WILLIAM CLYMER, and JORGE DIAZ-HERRERA
WEDNESDAY, JUNE 25, 2008
10 A.M.

CAPTIONING PROVIDED BY:
ALTERNATIVE COMMUNICATION SERVICES, LLC
P.O. BOX 278
LOMBARD, IL 60148

* * * * *

This is being provided in a rough-draft format. Communication Access Realtime Translation (CART) is provided in order to facilitate communication accessibility and may not be a totally verbatim record of the proceedings

* * * * *

>> We'll just go ahead. And the presenters will present for 30 minutes. We have a 10-minute Q and A set aside for that. Also when you're done with the presentation. This is the number for the evaluation for today. You can either fill it out on line or at a hard copy. So thank you very much and now I would like to turn it over to the presenters.

>> Richard Ladner: I'll stand up here, I guess. Make sure everybody can see the captions that needs to. My name is Richard Ladner from the University of Washington. I want to start by we already heard Bill Clymer and Jorge Diaz-Herrera, my partners in crime for this project. It's kind of a unique project, collaboration between RIT, NTID and University of Washington. I guess I advance it myself here. So the idea is deaf and hard-of-hearing cyber community in STEM. STEM stands for science, technology, engineering and mathematics. And we're going to have a Summit on this topic

just following this conference. It will be over at Golisano College which is across the campus. Any of you are invited to come and observe if you would like to. For this -- it's sponsored by the National Science Foundation. And what we're going to do is bring in about 50 leaders and we'll talk about those leaders in a moment to try and figure out how to build this cyber community, so the sort of two main goals. One is based on the realization that deaf and hard-of-hearing people are advancing in science, technology, engineering and mathematics rapidly yet interpreters are still more or less trained the way they used to be. It's improving but there are very few interpreters that really are trained themselves in science, technology, engineering and mathematics. As deaf people move up they need the best qualified interpreters to make sure they follow the material that is taught in classrooms or in seminars or on one-to-ones with professors and so on. So it's always interesting to read about deaf people in science and how they achieved what they did without interpreters many years ago. But nowadays, you know, science, technology, engineering and mathematics are moving very fast. People want to keep up, and they do, then they will need to get interpreters that are effective. Now, the interpreter or captioner that is most effective for my topic, for example, biology, and I'm at Stanford, university, maybe the best interpreter actually is here in Rochester so how can we make them -- how can we connect them together in a seamless way so that they can -- that interpreter can interpret for that person? Now those of you who know about VRS and VRI. VRI is video remote interpreting. That's already happening. There are companies that provide that but it's pretty low resolution and those interpreters that work for those companies are not necessarily qualified to be in the classroom in these topics. So this is sort of the beginning. We haven't figured out much yet except for this grand concept so we're trying to identify the benefits and challenges associated with implementing this multimedia cyber infrastructure. Means internet, to support deaf and hard-of-hearing students in science, technology, engineering and mathematics. So that's sort of the goal and I'm hoping that as we proceed today that there will be a lot of discussion, ideas. I should mention that this concept came to me when I was visiting Japan -- after I visited Japan in 2006. I visited a university of technology and I saw some of the projects they were working on there and one of them was remote interpreting. It wasn't necessarily for science but when I came back I realized that this was a real need here in the United States. So I contacted my colleagues at RIT, I knew Jorge and we made the connection and it's growing. We made several proposals to National Science Foundation on follow-up already and we're still waiting on one of them. One of them was turned down but one is still pending. So just a little background. I know many of you are international. So again our goal is to increase the number of deaf and hard-of-hearing students in sort of mainstream universities, not necessarily at RIT or at Gallaudet or just out there. If I were a deaf student and I wanted to get the best science education and I could get into M.I.T., that's where I would go. Or if I wanted to get the best computer science education, I probably come to RIT or University of Washington. There are about 28 million people in the United States with a hearing loss. That includes elderly people, people that are basically oral that don't use sign language but they still need captions. Maybe one to 2 million use American Sign Language. I think that number might be a little bit big. We know of here at NTID there are 300 mainstream in STEM here at RIT which is a very nice number and across the rest of the country there might be another 400, that's a guess. My guess actually would be more like several thousand but -- so there is a need out there and it's growing. I already talked about the need for skilled interpreters and captioners. In the United States there's the registry of interpreters for the deaf and I think it's -- by 2012 I

believe that all such interpreters must have bachelor's degrees, naturally there will be a grandfather clause which will allow certified interpreters to continue to be interpreters without the bachelor's degree. Interesting enough a student came up to me recently at university of Washington and she wanted to be an interpreter. She was in my deaf studies class. What should I major in? I said well I think you should perhaps think about majoring in some science or technology field because that's where the deaf people are going to be going in the future and they need the certified interpreters to know about these topics and know the terminology and the language. So naturally at the beginning level it's not too differently. When you move up to getting a Ph.D. the interpreter really has to be skilled. I know of a colleague of mine who is deaf. He's going to be at the Summit, actually. He's a Ph.D. student at Stanford in chemistry earning his Ph.D. at Stanford, he works with an interpreter to develop signs for chemistry because there aren't that many signs advanced chemistry. The two of them, could these signs be shared in maybe there are good signs. Part of this project is to build up the capacity of ASL to handle more signs for science. So we'll talk about that a little later. So I was wondering if Bill could come up now and talk about this part.

>> William Clymer: Good morning. Hear me okay? The one thing I wanted to reinforce is the idea that it's very difficult to put these microphones on. No, it's okay. What I wanted to share with all of our international partners here today that this type of technology could be very useful in countries where there is a lack of professional interpreters. I could imagine the interpreters in Beijing centrally located but in the surrounding major cities there is a very limited number of professional interpreters. Perhaps, you could use this technology to bring interpreters electronically, digitally, into your university where they wouldn't have to travel to be there in person in the classroom. So what we're talking about is much like the video presentation that we recorded of the doctor on Monday. Imagine that a student would have their laptop or other appliance in front of them and they would have windows on the laptop where the captioner could be in Beijing, the student with their laptop -- I forgot about that. Bob is talking over me. The student could be in a city and they could see the captioning, they could see the PowerPoints and they could see the doctor. We envision a technology where the student could communicate back to the captionist if they needed to participate in the discussion. As you know on the Mac there's a little video camera so I could sign or type back to those support service providers. This is not perfect yet for this solution but it's close. And the mix of educators, technologists and professionals in deaf education could get together and find solutions. So we brought together six groups, approximately eight people within each group, those that are interested in education, evaluation and research. Those at the university that provide support services to deaf students. Because you must remember we're talking about universities that are not like RIT and NTID. We're talking about universities with three, four, five deaf kids attending there. Not experienced in how to provide support services. So we have to educate those support service people to provide the best possible service. We envision a day when the service provision could occur in the classroom, the lab, or library and the service provider would be the interpreter or captioner would be off campus. We thought it very important to bring in faculty who would be actually the ones providing the instruction but may have limited experience with deaf students in their classroom. So we thought let's bring these faculty here that have some experience with providing instruction to deaf and then see what they have to say about what the ideal system would be for them. Jorge brought together cyber infrastructure specialists that are very skilled in high-speed communication and user

interface to help us design the best possible system. We have brought together representatives from the professions of interpreting and captioning, both from an educational perspective and from a business perspective. So we can see what they have to say about the issues related to remote service provision. Most importantly, we have brought together some students that are STEM students here at NTID and other universities. They are going to come here and we're not going to restrict their thinking. We're going to say if it was a perfect world and you had to depend on remote provision of services, what do you envision? What do you want? Do you want to be able to choose captions or sign? Do you want the PowerPoint bigger or smaller? Do you want another window where you could talk with other students? We want their best thinking about what would be an ideal scenario. These are the names of the leaders that will be here starting this afternoon related to research, service provision and STEM faculty. Cyber infrastructure, captioning research, and students. Now remember each of those groups has an additional six to seven people that will be here and will be having informal discussions related to this topic area. I'll let you read these. Really what we're talking about is a focus group. No idea is a bad idea. We want to hear what people think is perfect, that's on the first day. The second day is let's prioritize these ideas so that we can then continue our work and apply for funding to conduct research and development. We have started to collect the thinking of our constituencies and they are posted on the internet. These are some issues just to show you what some students have told us. I would like to now show you the worldwide web page we have for is Summit so you can access the resources we have produced to date. This is a one-hour video of the talk. On your hand-outs is the URL, the worldwide address for the Summit resources page. We are using this to communicate with all the participants but you are more than welcome to review this research and planning documents. It begins with the schedule and planning documents it then moves to just some very brief resources that we have located or identified as they relate to provision of remote captioning and interpreting. The top two bibliographies are very long. They are approximately 100 pages because we have put in there both the reference and the actual paper itself. You are free to download and review this information. Mark has conducted some research related to the benefits of remote versus live service provisions. He's graciously allowed us to post his research, as well. Anna has done some work at the university of Washington and her paper is there, also. Over the next couple of days we will be updating the resources that each group has pulled together. So under each heading you will get the full name and address and affiliation of each participant and you will get their talking points, outlines, white papers. We would like you to review this information and provide us with feedback. If you have any thoughts related to these groups or if you have any thoughts in general, if we missed something, because honestly we're not the total experts on this. We're learning with everyone else. We're looking for feedback and suggestions. I can stop now and ask Jorge if he has anything he would like to add. You might use the microphone there, please.

>> Jorge Diaz-Herrera: I just briefly introduce myself. I'm the dean of the College of Computing and Information Sciences at RIT. It's a new term introduced by the National Science Foundation to provoke our thinking that the 21st century information economy needs a different type of infrastructure other than roads and telephones and telegraphs. We need a cyber infrastructure where the most powerful computing power and telecommunications technologies is available to anybody anywhere in your desk top, in your house, and use that technology to conduct businesses, to communicate. So that's why we using the term cyber infrastructure which is computing and communication technology to allow STEM students in mainstream universities, as you heard, Richard and Bill talk about to actually have access in a

multimedia environment to interpreting services, to lectures and to additional material. So my group will focus on the actual computing technology that exists today. There are needs, that the problems, barriers, and how to enhance the existing tools to make these happen.

>> [inaudible comment]

>> I'll start over. So this is the example of the ASL STEM form. This is intended to be an enabler for American Sign Language to grow in a very natural way. Where people can contribute signs to the forum and discuss them. And so on the left here, for example, are some big topics like engineering, mathematics, science and technology. Forum, it's a general to discuss science generally. You can open those up. For example, if I do technology, then there's maybe computer science, and we actually seeded quite a few things here. Maybe we could do human computer interaction and so on. Now there's nothing there. Let's go programming languages. There's quite a bit here. I don't know if there's a sign for algorithm. Yeah. So my student Jessica has put in a sign for algebra and then you can look at it, see what she has to say. So she spells it out to start with. And then gives the sign. Then you can replay it again. As you can see this is actually a link to YouTube and so this -- what is really nice is that enables just about anybody in the world to upload a sign because you just happen to have a video camera and go to YouTube and you are off and running. You can start contributing. There's also ways to add comments below. I guess I'm not on this one but other ones. No comments on this. You can add comments below. You can add other signs. You can rate the signs and things like that. This is an idea. We implemented it and we're now just testing it. I guess we're in the alpha test, is that right, Anna, pretty much? So it's not quite open. We have it opened to a few people and asking them to help us get started to get the user interface correct and stuff like that. So to date most things you think about are sign language dictionary on line. This is a forum a natural process for people invent signs or talk about signs or share signs in a sort of natural way as opposed to somebody on top saying well this is the sign for -- I forgot what the sign was for algebra or something like that. Okay. So I think let's open it up now for comments, questions. Bill, I or Jorge will be happy to answer questions. Yes, in the back, why don't you come up to the microphone. Oh, you're the captioner?

>> I'm not the captioner. I can't spell. I think what you're talking about right now is a very important point that has come up in multiple meetings across the country that I've attended and last week I was attending a meeting with NSF and the question came up what are the consistent technical math signs? When I hear that an individual has negotiated a sign with the interpreter, what happens when they go outside and they have to interact with other people? They have -- they don't have the same signs that they are getting. In all of this I would just caution that somehow, some kind of group will settle on a sign for algebra and not have university-based signs or northeast United States signs, whatever. I think it's a critical point in order to have consistent conversations across various places.

>> Richard Ladner: That's a very good point. I am hoping the ASL STEM forum will encourage that and enable that to happen. That's one of the purposes of the rating is people can go in and rate and say I like this one, I don't like this one, things like that so maybe there will be some convergence. There are probably for the word computer which is -- there are at least, you know, many, many, five or six signs people use all over the country. It hasn't converged yet. But, let me tell you, it will over time because it is a natural language. It is American Sign Language is a natural language. I think one of the reasons that maybe it's hard for convergence to happen now with sign language is that many years ago when the schools for the deaf very few centers of deafness where the language was growing. A focus at

Gallaudet and so on so that the language could converge maybe faster. Now deaf students are distributed all around the country. Individual interpreters inventing signs with the individual students in high schools all over the place. So it may take longer for convergence. But like most natural languages there is convergence on terminology that's common. Yes.

>> Hi, I'm a sign language interpreter and I'm also an instructional designer. And I think that in terms of lexicon, as an interpreter my training and my focus is not necessarily so much on a lexical level but more on the discourse level. If I'm an interpreter and I see someone sign one of the five different signs for computer I have to know all those different signs. So I don't know necessarily the goal is convergence because I think dialects are going to continue to happen, perhaps. But for us to be aware of all the variations and perhaps have an emphasis also on the discourse of how we talk about science and ASL as opposed to swapping out when we hear this word we're going to put in this sign.

>> Richard Ladner: That's a very good point. I think it's one of the purposes, I don't have it up here now. We have the one place to go talk about signs generally for that kind of discussion.

>> I had another comment or two. I'm from the Florida school for the deaf and blind. Being in a K-12 institution we would not have access to YouTube. It is blocked if you have federal funding that would be preventive for us having any access. We do need access because we do have more students that are interested in math, science, technology areas. We and some other groups around the country are trying to develop our own sign language videos to help support our own interpreters, our parents, tutors, students. This is very timely but I think we definitely need to make sure this is advertised as widely as possible to everyone who is making plans can contribute here so we have one central place or not go too far ahead when it is being done in another location. The other thing to follow up on what she just mentioned one of the concepts we've been discussing is there are time for individual sign but there's also a time and a place for a concept to be more, you know, lengthy, group of signs to adequately describe a scientific concept.

>> Jorge Diaz-Herrera: Just a point of information for you. There is an alternative to YouTube called YouTeach. So you could get that.

>> But if that lives in YouTube.

>> Jorge Diaz-Herrera: They can move it over.

>> Wherever that lives that has to be decided early.

>> Richard Ladner: If you remember the beginning I talked about my focus has been on college and graduate school and that's where the signs are being invented and stuff like that. The purpose isn't so much K-12 here but I think maybe there could be an alternative to this for K-12 which uses something different.

>> Right, the discussion, the activity, the development can happen at that level but our kids are taking chemistry at the high school level in preparation for college so it's not meaningful for them to have a whole different set of sign convention and then go to college and then start over.

>> Richard Ladner: Yeah, Bill.

>> William Clymer: The five-minute warning right now. We have to be out of the -- have to be out of the room so the next group can get in at 10:45.

>> Richard Ladner: One more question. Yes.

>> Just moving off of the sign language part, I would strongly encourage people to think broadly about these issues of access particularly in formal settings and where people -- people are meeting outside so that whatever you develop becomes portable, easy to use, easy to set up, and cheap. And I'm thinking about students eventually graduate and they go out to get a job and this kind of communication will be critical for them to progress in their job

and stay in their job. So I would -- don't just look at the classroom, look outside of the classroom and where they will be going when they graduate.

>> Richard Ladner: One last question. Stand up, though. Still stand.

>> I teach at west Texas in a smaller college there for the deaf students. I teach various majors, office technology and such, and my students are very diverse, some from Mexico, some are other international students, some are very strong -- have very strong ASL skills. Some are from mainstream programs. For example, this is an example of the sign when I use computer they don't understand it so then the group discusses it and then that's the beginning. For example, this is a sign I use for internet but the students decided this like more of an initialized sign better internet. If they are out looking for a job this is more of the networking and then the initialized version is specifically related to the internet but I think this is wonderful with the forum idea and I think it really will lead universities to develop much more of a sign language and more of a vocabulary, but at the same time I would like to caution you, when you -- if you chose to put this on a CD or a DVD just be carefully with specific vocabulary and my concern is that around the U.S. everybody is still going to have the individual local signs. I don't think it's going to be completely standardized but that's just my thought.

>> Richard Ladner: I wanted to thank everybody for coming today and enjoy the rest of the meeting.

[APPLAUSE]

>> If you don't mind filling out the evaluation I would greatly appreciate it. The number is listed on the board. It is hard copy or on line.