

Gallaudet University
Department of Interpreting and Translation

2017-2018 Colloquium Lecture Series
Dr. Patrick Boudreault
September 8, 2017

This Communication Access Realtime Translation (CART) is provided to facilitate communication accessibility and is not a verbatim record of the proceedings.

DR. KEITH CAGLE

Hello everyone! I'd like everyone's attention. Good morning. This morning I was driving into campus from Annapolis, my hometown. I have to say what a beautiful Friday morning it is. Blue skies with temperatures in the low 70s. Absolutely perfect weather. I love it. It feels like fall. I felt like going out for a walk to enjoy the weather but at the same time, in the back of my mind, I was thinking about the people who are living in the Caribbean right now and all that they have gone through with the hurricane. There are also those in Florida are now facing Hurricane Irma as she comes ashore. My heart goes out to these people. I'm also thinking about the people in Louisiana and Texas and all they are facing with the devastation and the flooding. So I wanted to start this morning by saying our heart is with all of you in Texas, Louisiana, Florida, and the Caribbean. We are here, enjoying blue skies and 70-degree weather, but we aren't forgetting our neighbors today as we go through our weekend.

Welcome staff, students, faculty, deans, and administrators. The Department of Interpreting and Translation wishes to welcome each of you. Let's have a show of hands for DoIT faculty and staff. We have several members present today who educate our students in the doctoral, masters, and bachelors program. Which students are present today? I see several. You are the heartbeat of our program. Do you feel the pulse? You don't? Perhaps you don't yet have Deaf heartbeat, but you will feel the vibrations soon enough.

I am Dr. Keith Cagle. I teach PhD, MA, and BA students. This program is sponsored by the Center for Interpreting and Translation Research (CAITR). This is the fifth year of our 2017 Colloquium Lecture Series. Boy, time sure does fly. In the colloquium we typically invite esteemed scholars to come for a year to give lectures on their research findings in the field. We come together to learn about their work. I'm thrilled to have today's presenter with us and we will soon introduce him.

All of these Colloquium lectures are video recorded and archived on our website. You can watch them at any time. I would also like to thank our two interpreters today – Amanda Mueller and Jen Vold. Thank you very much for being here this morning. We appreciate your work.

After the presentation we will have lunch in the cafeteria on the second floor. You are all welcome to join us! You will be able to meet and mingle with our presenter during the

lunch hour. Without further ado, let's begin with comments from our CAITR director, Dr. Brenda Nicodemus.

DR. BRENDA NICODEMUS

Thank you, Keith. I'd like to share a few remarks before Dr. Boudreault begins his talk. On November 10th we will have our second lecture in the series, a presentation by Dr. Ruth Anna Spooner from RIT. She will also be discussing transitions but not in a scientific genre, as Dr. Boudreault will today. Her focus is literary translation. So it will be interesting to see how her work and his interrelate. On February 9th we will have a lecture by Dr. Deborah Russell whose work might be familiar to many of you. She is well known for her research on legal interpreting. She will talk to us about data that she's collected, as well as other findings about legal interpreting worldwide and how that compares to spoken language interpretation.

We are pleased to have the lecture series conclude with one of our own, Pamela Collins. Pamela will be presenting new research that is in the early stages of being publicly shared. She will discuss agency practices for scheduling interpreters, and what sorts of behind-the-scenes decisions affect interpreter assignments. She conducted an ethnographic analysis of how scheduling affects interpreters' work. This will certainly have an impact on your own careers beyond graduation.

The structure of each lecture is that the presenter will speak for about 30-40 minutes. Dr. Boudreault will do that today by summarizing his work, then we'll have a respondent – Dr. Emily Shaw – join him on stage. At the end of their discussion the floor will then be opened up to the audience. If any of you have comments or questions, don't be shy. Come right down to the front and ask Dr. Boudreault whatever questions you might have about translation. With that, I turn it back over to Dr. Cagle to introduce today's Colloquium Series lecturer.

DR. KEITH CAGLE

Thank you Brenda. I appreciate that. It is such an honor for me to welcome Dr. Patrick Boudreault. I have to admit, I struggled for quite a long time spelling his name and I've had to practice it. I've become quite proficient as you can see I got it right. The first time I met Patrick was well a few years ago. I met him at the University of New Mexico in Albuquerque at a high desert linguistics conference. He was a young whippersnapper back then. I had a conversation with him and I learned he was from Québec. At the time he was living in California in the Bay Area. I had a great conversation with him. We talked about Quebec, and I learned that he was fluent in LSQ, the French signed language, Quebec Signed Language. We went our separate ways but I then heard that he was working at a state university California State University Northridge, CSUN. He was developing quite a reputation for himself there. He was printed in RID, had publications, rather, in RID, quite an esteemed researcher.

He then went to work in the Bay Area. And then three or four years ago, he came to Gallaudet University. How time flies! So he joined Gallaudet University and we are so fortunate to have him here. I'm thrilled to be introducing him. He worked in the Department of ASL-Deaf Studies for two years. He holds an MA in ASL, and he was the coordinator of the MA in ASL program. Fortunately, we had come on over to the Department of Interpretation and Translation. And again, we are just thrilled to have him in our department.

And so, of course his research is well known, translating and interpreting, and his work on Certified Deaf interpreters. He's working under the CASLI board developing testing criteria for RID. Again it is such an honor to have him here today to present his findings on his research. Let's give him a warm welcome.

DR. PATRICK BOUDREAULT

Thank you Keith and Brenda for such a warm introduction. It's a pleasure and an honor to be here. I'm looking forward to sharing my work, which is the culmination of this project, which has been conducted over the past 11 years.

I selected a few highlights, most of which has already been published. There are a number of articles that we have published as a result of this project and again I've highlighted the work that has come from that. I'll be looking at how education and language use affects the learning and comprehension of deaf people about genetics. After having gotten a number of grants we developed material I will explain the process of data collection and material development.

The agenda for today's talk will be covered in a series of six segments. I'll start by talking about the history and philosophy of our team. After that I'll move into a discussion of four areas of findings. At the conclusion of that I'll show you some of the products that we developed based on those findings and I'll end with a discussion of future directions and possible research questions.

As I said I'll start with the history of the project.

The person pictured here is Dr. Christina Palmer from UCLA. She is hearing and the two of us have been working together closely since 2005. We were awarded the grant in 2006. So we have worked as co-principal investigators on all three of the grants and continue to collaborate today.

As you can see in the legend on the bottom right, the green triangles are present the timeline for the grants that we were awarded from the National Institutes of Health. Which was designed to focus on cancer education and genetics and the deaf population. So to understand how genetic counseling would influence the deaf population understanding of inheritance of deafness. That led to getting another grant from NCI about cancer education and finally that led us to get another grant from the

Genetic Alliance about materials developed in for the deaf population. and to translate our research findings into tangible materials to benefit the general public.

In doing this work we encountered a number of realizations that led to the subsequent grants. I will talk about how the research findings from the NIH and NCI grants led to the development of materials through the Genetic Alliance.

As for our philosophy, we took an approach that diverged from the traditional research model which is such that usually academics work almost independently of the deaf community or whichever community they are trying to serve. They simply go to the community and gather information and return back to the academic institution to conduct their analyses and what have you.

Our approach was radically different in that we wanted to collaborate in such a way that acknowledged different cultures. We used statistics about genetics, linguistic studies, deaf studies, sign language interpreting and audiology. We worked closely with the deaf community and work with researchers who were part of the deaf community to ensure that we had true cross-cultural collaboration. And in no way did we work separately from the deaf community and nor did we make them feel excluded from our work.

Now, I have to say that a team did not mean just, our team was not composed of just myself and Dr. Palmer. As you can see here there were a number of people involved in all three of these grants. The names listed in white our team members who were hearing. The three names in blue were staff interpreters. Rochelle Trank was a staff interpreter on the first grant and so she focused exclusively on interpretation and translation of training materials. The names in green are the team members who were deaf and there are two names in orange, which might be hard to see, but Genie Geertz and Alyce Reynolds were deaf and they served as translators. So as you can see we have about a 50-50 split of deaf and hearing people. You can see that we came from a number of universities shown at the bottom of the screen.

Now I will move into the findings component of the talk. The first set of findings come from the NIH grant about genetic counseling. When I say genetic counseling I mean that an individual who has had a genetic test actually sits down with a genetic counselor to talk about hereditary genes and understanding of how to deaf genes are passed down. In 1999 two deaf genes were discovered that most commonly lead to people being genetically deaf. Those are Connexin 26 and 30. So we had our participants give blood in order to have a test done of their genetic profile and then they met with a genetic counselor.

I'll focus on our findings of one aspect of this process of testing and genetic counseling.

So again, we wanted to do a genetic test and have them meet with a genetic counselor to see what their understanding was of genetics. Our research question was whether genetic counseling enhances a person's knowledge of genetics and the inheritance of deaf genes.

Our second research question was whether an individual's language use and/or their prior beliefs about genetics would influence their own knowledge about genetics.

The ways in which we addressed these questions was by having participation of 244 individuals across a span of 2½ years. The duration of individual participation was six months, which included recruitment, pretesting, genetic testing, genetic counseling, and the post-test. So this was a fairly substantial commitment. The genetic counseling was usually a two-hour meeting. In most cases they had an interpreter. We also asked them to take a pre-and post-test.

We had a number of questions on the pre-and post-test. But I will just show you a sampling of what we asked them to answer in order to understand how we measured their responses and how that addressed research questions A and B.

We divided participants into three groups based on self-selection. Some prefer to meet with a genetic counselor and have a conversation through an interpreter. Some preferred to also use English and some prefer to not have it interpreter and interact with the genetic counselor only in English. You can see the majority of people chose to have an interpreter in the genetic counseling session.

We also asked questions about the etiology of deafness, or to address their prior beliefs that way you can see whether they knew anything about genetics or not and if the genetic counseling session had influenced their understanding. Using myself as an example I have several generations of deaf family members. So my assumption or my prior belief is that I have a deaf gene but we could measure that with a pre-and post-test. We conducted those pre-and post-tests online. There were 10 questions each. They were available in ASL, English, and Spanish. And again we designed these 10 questions on the pre-and post-test to specifically address our two research questions.

Now let me explain to you what you are looking at.

On the y-axis we have a number of correct responses for each participant group. On the far left are those who use ASL only. Those are the individuals who worked with their genetic counselor through an interpreter. In the middle were those who use ASL and English and on the far right are those who only using English. The green line is the baseline or the pretest and the orange line, the higher line is the post test.

So, in response to research question A we did see that their scores improved from 7.61 to 7.92 for all groups. So everyone did a bit better. What we found was an answer to research question B was that those who use ASL experiences more challenges in learning about genetics, from their genetic counselor than those who used English.

While we do see that those who used ASL and communicate through an interpreter did improve the knowledge we see that their gains were not as large as those who use English. Why is that exactly?

This brought up considerations about implications for genetic counseling in a way that is linguistically and culturally sensitive. This help us lead to next up that help us create informational and educational materials about cancer and genetics in ASL which led us to apply for the second grant from the NCI.

So in developing these materials, we wanted to do testing. We could not just test without the materials. We wanted to develop material so there was quite a bit of translation work on our end and I will explain more about that in a moment.

First let's talk about the process. There were three phases. We begin with our focus group. So we had participants come in. We showed different materials from already existing external organizations and resources. Be it in ASL, graphs, English text. We show them technical vocabulary for genetic counseling to see what they understood and what they were comfortable with and we took notes on all of their feedback identifying areas of concern. We had three focus groups. Two were to do with the risks of family genetics and cancer. The two focus groups had an average risk to moderate risk and the third group had cancer already in the family, so they had a high risk and so we met with the individuals, 19 participants in total, and gathered information from them and I will show you in a moment what the results look like.

The next part of the process was based on the focus groups on the feedback that we received we developed a prototype of educational materials. That included videos, English text on educational material, a prototype that we could then go back and show the community.

For the second focus group we had individuals who had participated in the first focus group and also consultants as well as individuals who did not participate in the first focus group. The way we got the third group of individuals who had not yet participated is we went to the deaf expo and asked individuals randomly if they'd like to participate in the research. So we did collect the information in different ways to find out if the educational materials were clear to them. Took back the feedback so we not only looked at language accessibility. We also looked at the user overall experience with the material. And so we provided it in two different formats: ASL with an English transcript and another video with ASL with close captioning of English. So those were the two formats that we showed. And we saw that all of the focus groups did not prefer the transcript but instead preferred the ASL video with captioning. The next part of the process was we develop the educational materials and we came up with the final product with six modules each of the modules having quizzes related to the material that was learned. And so once the participant saw the module they could take a quiz to see what they had learned.

Here is an example of the material that we showed the focus groups.

I will just show you a quick vignette of the so you can get an idea of what it is we showed them. Consider what it is you experience as you watch them and have an idea

of what kind of information you receive from the focus groups in order to then develop better materials.

I will show you the second video now. The last is a snapshot of the video and I can see you all pondering what you just watched it's pretty difficult, right? And really we wanted to get a sense of critique of the work because our goal was to improve the educational videos and so as you can see the very first thing that was not of a native signer. There are grammatical errors, phonology and structural errors. So would deaf community members understand that individual? Also the visual aspects are difficult. The second video is nice language but the background makes it very difficult to see. She does sign fast, the prosody is a bit off, it might be not conducive to what individuals need in order to support their learning and the terminology used is quite technical. The third one is quite nice but when she finger spells it is right in front of her face and there is text happening simultaneously which can be quite overwhelming for the person watching it.

The grammar is very different from the grammatical structures of ASL. The use of space is not one that is conducive to learning. The last thing is quite nice in regard to the background and the way the graphics are shown in so we wanted to take the feedback that we received from all of them and incorporate that into the prototype.

So we developed six modules, which you can see here. And one would sequence through them in this order. We have introduction creating a family tree, factors and risks inherited, with inherited cancer, how cancer is inherited, the role of genetic counseling and testing, and then module six is a review. Under each of the modules you can see there are quizzes at the end of the presentation I can show you what those look like.

So obviously it's not just producing the text in ASL. It is a much more in-depth endeavor. So we have to have the ASL content, the ASL, the graphs, the visuals to support that and then of course the translation of the English into the target language of English. So we began with ASL as our source. Often time education materials that are available out there are English based and translated into ASL. We flipped that process. We needed to make sure that we included from the onset what the community needed, with the language of the deaf community is in order to produce appropriately organize information and produce educational materials that would in fact benefit the deaf community. So that the videos and the graphics would all align so it would be a deaf centered approach.

Here's an example of how we went about this. It was quite laborious, 38 minutes of material. Of course we had to consider the editing. The sequencing. I will show you too what we did. You can see the gloss on the left. We had the translation and then we had the visual support was going to be for the video and what that would look like on the screen. You can see the notes right on the bottom. The one on the right is the gloss. You see and red, those are the edits we made based on the feedback we received from the team. So this was cyclical in nature. When we would produce something we would receive feedback and improved on the next prototype.

You can see here on this graph showing what the narrator would be signing and so of course would need to be knowledgeable on that part so it was quite an intensive process.

Some of the hearing team members who were not knowledgeable in ASL had access to the English gloss. They could still understand what was happening. So it was a really wonderful experience. We enjoyed working and got a lot of valuable feedback from the team members. I will now show you a 30-second clip of one of the prototypes we developed of the end product.

So you get an idea of what the product looks like. Information was reiterated with graphic supporting what the narrator was explaining. I will show more later. Now the concept of chunking is one where the participant is able to learn a concept and move onto the next one. We have this with English educational materials and we did the same with the ASL materials. So the way we edited the videos is a way that provided an opportunity for the individual to learn in the manner of chunking, to get information in separate, digestible units.

If of course we gave all the information once, it's a cognitive overload and one does not know what they read and so the chunking allows the individual to digest the material in a more comfortable format.

We also made sure that the English was translated according to a readability index. So it was at a sixth grade reading level. The third part of our findings, given what we knew from the NIH and NCI work, we then developed materials based on all of these findings and based on what we had learned in order to create the most optimal materials and in order to then evaluate them.

All of these materials were bilingual. They were available in ASL and English, which we had already found was more beneficial than being presented in English alone. This study had a more complex design than the earlier one. In this study participants were randomized to groups in which they received information through ASL or through English only. They were randomized to those two groups but within those two groups were stratified into individuals who had high levels of education meaning postsecondary and those who had low levels of education meaning those who might have had some high school education but may not have completed it. We also conducted pre-and post tests just like the first study had done and in this case we included 25 items on understanding risk factors of cancer or genetics and they were only available in ASL and English. We did a pre-test to look at their understanding of cancer and then looked at whether their accuracy on the post-test was enhanced at all. In this study we had 150 participants.

Again, let me talk about this figure before you start looking at the lines on the graph. On the y-axis we have their total knowledge score, this shows their baseline understanding of cancer genetics. And on the X-axis we have scores on the pretest and post-test. So

in between those two we have the intervention, which was the material that we presented in either ASL with captioning or English only.

So you see two lines for the group with high education and then the two lines for those with low education and a statistically significant difference in their performance. This was interaction between their education and language modality. What you can see is that all participants of high education benefited greatly from the information regardless of whether the presentation was in ASL with captioning or English only. So in that regard the modality is no different for those who had high education but participants who had low education still benefited from the material presented in ASL with captioning but there was no improvement in their understanding of cancer or genetics when they strictly read an English text. Now this leaves us with the question of fact that, why is it that they both benefit from ASL and English but those with low education are still underperforming compared to their peers with high education?

So we focused only on the group who got this information in ASL and saw that those who had high education performed differently than those with low education. This suggests that materials are more developed and such a level that it's only accessible to those who have high education. This has serious consequences for the community because about 50% of the deaf population in America does not have post-secondary education. So what are the implications of this for the deaf community understanding of cancer or health literacy. This has tremendous implications and increasingly nationwide we're discussing how to present information but it's being presented in English text. In the government they talk about making sure that public information is readable and accessible but we also need to take a look at how readability and accessibility is defined for the deaf population.

The final set of findings has to do with cancer genetics education. So we developed prototype information we did study three to see whether education and language impacts their ability to understand it. But then we wanted to see how an everyday user would interact with this information available in a website so we conducted a study on web user viewing behaviors.

We took a look at a number of variables but to highlight them in today's talk. We looked at the number of times paused, played, or sought or saw information throughout the website which I refer to as PPS. So play means they might have just watched the video moved the progress bar to different points to seek out information and then we also looked at the time website visitor was looking at the website. We also asked for demographic information such as age, gender, education and ethnicity. And we had them do a task in which we could assess their ASL and English scores. These were self-ratings for English and then for the ASL we had them so a couple of tasks so we could evaluate their ASL proficiency.

So we compared all of these variables to see if there were any correlations between their PPS behaviors and time spent on the website with their demographics and their

language. As for demographics, we found that there is no significant interaction between demographics and viewing behavior except for gender. Women spent statistically significant greater amount of time on the website than males did. This may have been because they were more motivated learners but certainly not the case that women are more prone to getting cancer. Men and women are equally at risk for several types of cancer especially if its inherited. Again we looked at scores for ASL and English and wanted to see if that correlated with their PPS and found there was no association so regardless of how one scored on the ASL and English proficiency tasks they had equivalent PPS behaviors. However we saw a negative correlation between English and time spent on the website. So those who did not have as much English proficiency spent more time on the website because they took longer to understand the information. You might think that those that watch the ASL would be spending more time on the website because the videos you might think would take longer to watch than it would to read the English--- but that wasn't the case. It appears as though the way we developed our website and organized it was beneficial and user friendly and we found that participants had an easy time to navigate the website. Tracking the way in which people used our website allowed us to verify this.

As I said we developed prototypes and then end products, we develop this website, but we didn't want this to just sit on a shelf and not be used by the community. So we applied for a grant from the Genetic Alliance to make this website publicly available and make sure that it was widely used so we could give back to the community.

Here are a few screenshots of the website. You can see at the top it is organized into modules. On the far right you see a button to download a transcript in PDF or ePub format. At the center of the screen is a video. You can also turn the captions on or off. And then here is a sample screenshot of quizzes. This is within one of the modules. Four of the modules have quizzes. Now I'll go to the actual website where you can find these materials. I'm just going to click through a little bit but if you want to get a longer look at this feel free to go to the website on your own to have a look.

We created a story that we wove throughout the website about a fictional character we named Anna.

You can see how the narrator was engaging with the graphics to his left and that he could point to specific parts of the genetic tree and then incorporate that into the narration in ASL pausing appropriately. We can discuss that further.

I'm going to answer no for this one. So just saw me navigate the site briefly and got a glimpse of what a module lecture looks like, a quiz and the interactive ways in which someone can learn. That was also an example the ways we chunked information to provide emphasis and at time for different purposes: to caution people about something that they may want to consider or to provide an example. There was only six minutes worth of video but many people said they felt like it was much more rich, because of the information that was available in the graphics and how well they were able to really

absorb the information. So this seems like a best practice for this educational material that it would be more accessible than just a single narrator. A single narrator really doesn't reflect linguistic or cultural sensitivity and in this case we had an entire team who understood how present information in a culturally appropriate way.

These are screenshots of pages from a brochure that I didn't bring with me but I have it at my office so if you want to stop by and pick them up. This is a 16-page brochure that was developed with an ASL using audience in mind. The sentences were kept very readable. They had guidelines like sentences only being six or seven words in length. Not too complex. We also varied the color. We presented the information in a sequential order, where we provided background about cancer, defined it and then introduced how its inherited. This was a real challenge because it was entirely focused on presenting information in English, but it was a very good learning experience. So all of this data acquisition, production of materials and dissemination of materials has still left us with questions for future consideration. As a result I applied for a grant, which I was awarded in which I will focus on translational equivalency versus level of ASL equivalency, excuse me, complexity.

So translational equivalence is not just about the transmission of the the amount of content but also about how accessible it is through the complexity of the grammar, use of space, morphological complexity. So, for example in English there are clear guidelines about readability and how to alter complexity like I just mentioned with that brochure where we made sure that sentences weren't complex and therefore accessible. You can enter text into a website and it will calculate readability of a passage through a formula that's shown here on the bottom right. You can just copy and paste text into the website, this is a k-prep grade six prompt, and evaluated for readability according to whether the sentences are complex or not and returned results that tell you how complex, excuse me, the grade level of that passage is. So this passage is determined to be sixth grade, but by other formulas it's a eight point five-grade level, a eleven point five level all according to English complexity. We could tailor it down to a sixth grade reading level or even a fourth or fifth grade reading level. So it did not tell us exactly how to do it. We had to just manipulate the passages repeated to get down to a fourth or fifth grade reading level because that was the goal for our intended audience.

So this was a real experience in understanding the level of English complexity but what does that mean for ASL complexity? My hypothesis is that the more morphologically complex the construction is in ASL with inflections and use of classifiers, you would think that that would equate to a very complex sentence in English. What we already know the more complex in English the less easily compensable it is. But I wonder whether complexity, grammatical complexity, in ASL actually enhances comprehensibility. This is my hypothesis – that there would be an inverse relationship between comprehension and complexity in English and in ASL. So hopefully in two years I will see you again and I will present that research.

DR. EMILY SHAW

Congratulations, such a beautiful job. Fascinating research! Thank you so much for really thinking of the community and modeling for us that giving back to the upcoming researchers here among us, so I know that blood sweat and tears went into that and we are ever so grateful. Now at the end, I have a couple things I wanted to talk about but, you just mentioned the narrative component. You have talked about that in the past...the role of narrative. Of narration in choosing a structure specific for the topic. It really struck me that in the deaf community there is a tradition of narrative, of how we generate and pass down information your family passes the down, the cousin passed away from 36 at cancer and so on and it is a part of the language, part of the community culture and I think you incorporated that into the educational materials when describing complex concepts and so it really impressed me. Did you do that because the research showed you should or did you do it intuitively?

DR. PATRICK BOUDREAU

We very intentionally selected a character that we would use throughout the website and again made it just a fictional character named Anna with a particular family background but that would really anchor some of those examples that we would give and we could use that as an educational point. We thought that it would be more compelling and more engaging for the audience so that they would have more of a sense of ownership of this learning material and I think the point of view is interesting but the role of narrative in the community, honestly I think that narrative is ideal for any sort of learning because it creates a more personal learning experience.

DR. EMILY SHAW

By the way, something that hit me and something I have not thought about in this context before. In regard to the research design, you talk about your team it seems you recognize a problem and then you make a plan for addressing the program and you went on and improved along the way and I'm wondering if you might be able to share with me some of your perspectives as a deaf person. What you brought to the table and how that influence the process and perhaps changed the design?

DR. PATRICK BOUDREAU

Well, remember I said that from the outset we wanted to work cross culturally and collaboratively. So I would work with statisticians and say what is your interpretation of those statistics and often the hearing research would have one interpretation and I would often present a counter point of view and they would admit that they had never thought about it that way. So while statistics seem like they're objective they can be interpreted in different ways and that's where I think the collaboration really helped because depending on what your hypothesis is it will lead you to certain questions

which then lead you to certain findings. And again I think this is a question of the value of cross-cultural evaluation. Some of the team worked in the lab, some who served as a consultant, and some focused on deaf studies who were interpreters and I think that we value, the community benefited a great deal from having the cross-cultural collaboration.

DR. EMILY SHAW

While we are talking about scientific studies often times we don't engage the community or linguistic culture, we have to think relevant that the community really became part of the foundation of the research and without them that could be a huge gap in the research. So very rich and quite important.

DR. PATRICK BOUDREAULT

Part of why I have enjoyed this research so much was because I worked with medical professionals. Again Christina and I started working together in 2005 and we made it a point to make sure that our values and opinions were regarded equally and that we would not take anything for publication that any of us had reservations about we wanted to make sure that we would be something that truly been benefited the community and would be presented in an appropriate frame.

DR. EMILY SHAW

That's not easy work. I mean each person comes with their own baggage and I imagine there was tension at times.

DR. PATRICK BOUDREAULT

I think any of that tension is just you know a true intellectual exchange.

DR. EMILY SHAW

A collaborative effort I see. Okay my last question in regards to the translational equivalence. As an interpreter we oftentimes will meet with new clients to maybe you know we have five clients in a day and each person has a different linguistic style, different background and so forth and we have to figure out how to provide access in an equivalent and clear manner. Do we really provide a message in a comprehensible way. I don't know. Sometimes it feels like a black hole. I'm signing, I'm interpreting, I see the head nodding, but does person really understand the information that I'm interpreting. So it seems that the design of your research really has comprehension in mind from the onset and so I wonder how we could apply that approach to teaching interpreting. Are we doing that, can we do that on the fly I mean, translation is...is that why, I mean really to have time you're able to really consider the different components that go into translation and the interpreters doing it simultaneously can we somehow incorporate that skill into the simultaneous interpretation. I know it's a difficult question but one I am pondering.

DR. PATRICK BOUDREAULT

Well, even before anything we went through an extensive translation process and then like I said filming, editing, to get it on the website I would say in all it took two years. We certainly had the luxury of time and money to get it if not perfect, but at least to get it as close as we could. If someone were to do that on the fly, and I know of course that is the nature of interpreting. Over a span of years of experience we could certainly make those improvements. Sometimes having a deaf interpreter does help with the quality of simultaneous interpretation but there's also the impact of how much an interpreter fully comprehends of the content and we were able to have the benefit of many eyes and many people in the process and so I think it is a lot of work can be done in this area.

DR. EMILY SHAW

I remember as I began as a new interpreter being involved with a Shakespeare play really enjoyed it. The translation process really forced me to work with the text at a deeper level and actually helped my interpreting process that I was able to incorporate the concepts into my interpretation. So that translation is a rich experience and one that is valuable to interpreting.

When I think about the deaf community it's not just one-size-fits-all. I mean you talk about that second part where you had the high and low educated communities clearly that is a separately because there are two separate responses for that. You have spoken English and the high and low education some of who have ASL and don't have the equivalent of the reading level you are talking about. And I'm wondering if you would talk more about your research and what you're developing in the future.

DR. PATRICK BOUDREAULT

Like I said I think that the more morphologically complex it is in ASL I think it will be more comprehensible but what does that really mean? I noticed someone else in my audience agrees with my hypothesis. We get why that would be my hypothesis but at this point it is anecdotal. We don't have anything empirical. So we have to develop a study that will allow us to really look at variable levels of ASL complexity and then see what people's reactions are. So this will certainly be a pretty big undertaking to create that sort of readability guideline or comprehensibility guideline in a way that is based on objective information. Of course its influence by our own subjective experience as deaf researchers and we can alter the grammatical complexity of whatever passages we present in ASL. And one aspect of that study will be we will have to present information in English and we will know what the reading level is of the English passage, but how well a person is able to understand in English or ASL might vary because it might be because of proficiency and not because of readability. The vocabulary for example in English – we have good documentation of high frequency and low-frequency vocabulary but we do not have the same thing in ASL. So we don't know, but again we don't have objective measures of that and so we will have to come up with ways to actually tell us what it is that makes ASL complex and I think it will be a multi-year process of trial and error that will certainly be iterative but hopefully to lead to a very clear framework.

AUDIENCE QUESTION

Hi, good morning! My name is Martin I'm an interpreting student. I do have some friends that are doing some medical research that parallels some of your research and you have those of course it's typically very hearing research center not deafcentric as yours is and so I'm wondering if there are plans in order to recruit future students or deaf individuals to be able to participate in the research be an interpreting or medical field later?

DR. PATRICK BOUDREAULT

You're effectively asking two questions. When you say medical, that could mean STEM, that could mean clinical. On campus we are building a really great STEM program and I see an upward trend of deaf students going into those fields slow but it is steadily rising. So, we will be making opportunities to work with these students who are developing this expertise in scientific fields or STEM fields and interpreters will be working with the students who will go on to become medical professionals. So not only will these future medical professionals need to explain the content to the interpreters, the interpreters will have to pick up on how it is that they are talking about these topics and then an interpreter might want to ask the medical professional how they would explain the very same thing to a layperson. For example, I had a conversation with Christopher... His last name is escaping me.... Holland I think? He works in Sacramento. Ah...Moreland. That is the last name. Dr. Christopher Moreland. He's a deaf doctor. And when he talks to me about his area of work he signs in a certain way but then if I ask him to talk about the same thing as if you were talking to a lay person you see that it looks drastically different.

DR. DANIELLE HUNT

Wow! What an excellent lecture and the involvement of different groups in the entire process and the translators is fascinating. I'm wondering did you actually bring deaf biologists into the team or scientists those who are experts in the field and native in ASL and if you did can you explain why or why not?

DR. PATRICK BOUDREAULT

We didn't. But I learned from these experts but not deaf people who are in these fields. That's a good point. So that relates to the earlier question. I anticipate in the years to come there will be more deaf medical professionals. So I think that any future materials will be of greater quality. But in working on this I talked extensively with medical professionals and I'm sure that I really tested their patients because I had to clarify certain concepts so many times but again we had the luxury of time. And as a consumer I still had to really question my own understanding of these concepts. There were three

of us on the team who were deaf and once we all have the same understanding we felt that we could confidently present information in a way that was accurate.

DR. DANIELLE HUNT

It's interesting to see the different deaf scientist and their sign choices. And I think it's probably different than yours at times and so taking a step back and really thinking about I myself am not a scientist. I probably wouldn't understand their science anyway. So you know having the technical vocabulary may not be understandable but the layperson being able to translate it may make it more accessible to the community members. My other question is the concept you had mentioned of having the video processing and I think you worked with a teleprompter. I'm wondering on the teleprompter did you have English or ASL on the script?

DR. PATRICK BOUDREAULT

The text that was in the upper left quadrant of both of those screenshots were in ASL gloss and that is what was on the teleprompter. But in addition to that we also had the visual graphics that would be on the screen. So you had several lines of the gloss being presented at once and it really reduce the cognitive load and you could focus on the content of what you were saying. Based on my experience, having been the narrator in this case. We did not have to do that many retakes because of the amount of extensive preparation before the day of filming.

BEVERLY HOLLRAH

I have two questions for you. Since you had a lot of collaborative work with individuals involved in the study. But I'm wondering maybe you already mentioned that I missed it. How did you recruit all the people involved in it and was this a nationwide recruitment? Did you recruit from one particular geographical area?

DR. PATRICK BOUDREAULT

There are two major studies. The one about Deaf genetics from NIH that was primarily done in Southern California because of the component where people had to meet in person with a genetic counselor. That was done at the Riverside school in Fremont and then up in the Bay Area. The second major study was done online. So we had more geographic diversity there and then the dissemination of materials, which was done through the genetic alliance at deaf expos. So we printed 1,500 brochures. We gave all of those away. We also mailed 5,000 copies nationwide and then is also available online.

BEVERLY HOLLRAH

I'm wondering if you are still promoting this work because it's so valuable so beneficial to the community and I'm so very impressed with all work you've done. Are you promoting it in some way? And if so, how?

DR. PATRICK BOUDREAULT

We are still in the dissemination phase. Well there are at least 5,000 copies out there in the world somewhere. A lot of people have downloaded the brochure in the PDF or ePub format so it's out in that way. But of course it is a constant effort to make sure that the community is aware of it. Anyone in this room can feel free to help me get the word out.

AUDIENCE QUESTION

Hi, I'm Emily, an interpreting student here at the Gallaudet program in the graduate program. So my question to you in regard to the web design it's very clear, it's very interactive, quite attractive to the end-user I'm sure that's very beneficial. And it's obviously bimodal ASL and English, bimodal, bilingual. So I'm wondering about the design process and if it was clear for different users. I as an interpreter obviously want to improve my knowledge, my skills and so those educational materials are quite important to me so I'm wondering about the web design and the influence on other areas of education.

DR. PATRICK BOUDREAULT

Well, as I said, we used focus groups for the development of our prototype that was primarily where we gathered this information. That paper has been submitted to a journal. Hopefully the reviewers will accept it because it will be key in creating best practices or guidelines about how to create this sort of material. Of course, a more sophisticated end product would have an artistic flair to it where there is someone involved who has an eye for design so that they can select the right colors and have minimal use of text.

DR. BRENDA NICODEMUS

You talked about the final product and the final video and in it, and makes it look like it was such a simple process. It's a great reminder for us that the beautiful end product that is so finished, all the work and complex work that went into creating that was about 11 years of work?

DR. PATRICK BOUDREAULT

Well total among different research projects and seven or eight publications. And so again I've only chosen a few highlights from each publication for this talk today.

DR. BRENDA NICODEMUS

What a model and what an enormous amount of commitment behind this to be able to do something that well. My last question, I wonder if you know any research that's happening in regard to videography and translation, any kind of work throughout the US being done on medical information.

DR. PATRICK BOUDREAU

There is... Some of the beginnings of best practices of translation that is being read by Dr. Poorna Kushalnagar she also has a handful of a last name. She's on the faculty at Gallaudet and focuses on health education. She's done work in this area and has done translation questionnaires and has assessed the comprehensibility of those translations. Dr. Christopher Moreland who I just mentioned is also a medical professional. So he is someone whose expertise we're trying to capitalize on. So there are efforts out there, but the production of educational material is not yet sufficiently understood to where we can easily produce this information in ASL. It is still something that needs very focused work and so we need to do more work on this to make sure that information is presented in an accessible way beyond just being presented in ASL.

AUDIENCE QUESTION

Hi, so I have seen the graph and of the statistics about the people. You've shown the graph and statistics about what they actually learned and the benefit. I'm wondering did you get any narratives from the actual focus group, what they want more of, what they want to see disseminated?

DR. PATRICK BOUDREAU

You mean the focus group from the second study? That is the first one we did where there were 19 people. That took six hours. We had to do a lot of coding. Was there one thing that stuck in their minds to add? One area of ASL that came up a lot is they focused on clarity of whoever is signing it. To fingerspell less. And that was emphasized a great deal. Of course that is something that is easy to control for when you're filming someone. They talked about the use of graphics and the importance of each graphic being simple, easily intelligible. They actually like the use of metaphor a lot. They appreciated the ability to talk about their own experiences to each other in the focus group and that in and of itself was a great example of community support an exchange and so I would like to see that. I think that's where the storytelling aspect of the website came in.

DR. BRENDA NICODEMUS

Thank you. Again thank you so much. You make it look so easy. Thank you everyone for coming today and for partaking in this discussion. Now we have a better

understanding of all the work that goes into translation and do not forget November 9 is the next lecture talking about translation in poetry and prose in text and different prose and I think he will see a nice correlation between these two lectures. Again, it is Dr. Ruth Anna Spooner from RIT with another fascinating lecture. So again, thank you for coming, and please join us now in the cafeteria on the second floor for some time together and lunch and you can talk further to Dr. Patrick Boudreault. Until next time, thank you.