

Room 102 Session I

Girls and STEM + Girls with Disabilities and STEM

Maine Girls Collaborative Project: Resources for teachers/groups to work with girls.

Lead: Tara Treichel, Coastal Studies for Girls

Facilitator: Sarah Morrissette

Um, my, topics were moved into one because I do serve on the Maine Girls Collaborative Project...

Oh, we are doing a pilot program, a pilot program for the summer. (people talking low, unable to understand.)

This is a summer program that we are doing. We are full at the end of the year. We probably will have full programming, the population varies and changes. ...women and...

Do you...

This one is a day long, some of the other sessions are, summer sessions, and they are almost a day.

I was just thinking when I saw the two topics together, I was well I don't have anything to represent here.

Lynn Norman,

While we are waiting to start, here are some materials from Bangor Select, I will explain a little bit more about that...

Have been listening to the chat this morning about the length of...it should like the last \_\_\_\_\_ differential (too low)

But IT has the \_\_\_\_\_ the one field where the first women's \_\_\_\_\_...

Really, is that right.

It was I think at the most 30% maybe 20 years ago and now it is down to like 15 or 17%.

...those tend to me more in the lifeline of biology, physics would stay pretty flat, engineering has staying pretty flat, and computer science has ...

Yes, and it is reportedly more for women than it is for the population as a whole.

Yea, the proportion to women is not particularly likening to the hard science like engineering the pure science, is limited, but they should be represented population wise.

I am sure you have a lot of...part of this, a lot of just discussion for this kind of...

Um, hum. Yup.

Yes, are we just jumping in or...

Sure. So I will just explain. My name is Sara Morrison I am with the \_\_\_\_\_ and I am the moderator for this session which means that I am turning Big Blue on here, making sure we record what is happening. I am going to be taking notes from what happens and then with about 5 or 10 minutes to go if we haven't addressed those three questions that Anita gave to us, then we might shift and look at those. So how does this conversation inform our understanding of what it looks like when we do STEM teaching and learning well; what do partnerships that support learning look like; and given our different roles what steps can we take that will support them. So keep those in mind as we are chatting. If you want to start things off just because your name is at the top of the page.

Sure, the two topics are closely related and yet somewhat different as well, so I am Tara Treichel, I am the Director of Education at Costal Studies for Girls. I also serve on the leadership team for the Maine Girls Collaborative Project of which Mary and Jenn also are part of.

(too low to understand)

Well we are going to talk about the collaborative project at some point, I just don't know what the sequence is.

I...(all talking)

Why don't we just introduce...(all talking)

I'm Sheryl Marker, I am Director of the Women's Resource Center at the University of Maine and I am the lead, collaborate lead for the Maine Girls Collaborative Project. The Maine Girls Collaborative Project is a program that falls under the National Girls Collaborative Project which is a national science foundation funded project designed to get more girls into STEM fields and they do this by providing support and resources to the organization and the individuals that work with them. So it is not providing services or program specifically for girls but rather is supporting educators and other organizations. It is...I am going to...do you just want me to do quick introductions and then I can give you some details, as that is where I am from.

I'm Mary Madden and I direct the NSF advanced program at the University of Maine which is a 5-year project to advance women faculty in STEM and social behaviors at the University.

Do you \_\_\_\_\_ on the other end of the \_\_\_\_\_?

I will just say a little bit more about the school that I work for, Coastal Studies for Girls. It is a semester school that is for 10th grade girls. It is science related focused. We have 15 students right now, we will be able to have 32 after the renovation of a second building on our property. We serve 10th grade girls from all over the country, about 25% of our students have been from Maine traditionally and our science is biological science integrated science course.

My name is Paul Rogers. I'm CEO of the Science Service for \_\_\_\_\_ Fashion Company in Waldoboro. Our constant reason for being out amongst the professionals is to hear what the conversation is so that we can respond to it, we make apparatus. So why not make apparatus that works for you and the only way to know that is to listen to what you are going to say.

I'm Allen Curtis. I work at the Sanford Community \_\_\_\_\_ Disabilities studies at the University of Maine and I am coordinating a project that is funded through the Maine \_\_\_\_\_. We just recently started the project and the purpose is to support the transition of students with disabilities into STEM disciplines and a lot of this is new for us. \_\_\_\_\_ work on the project. We are very disability education oriented in STEM \_\_\_\_\_ but in doing some of the research and looking at what other programs have done we realize that a lot of the strategies that people were using in other programs around the country have been developed by programs that were designed to promote inclusion of girls in STEM placement. That is why...

I am going to go back to talking about this a little bit. It is like actually Girls with Disabilities are one of target populations that we are dealing with through this project and Janet Mays \_\_\_\_\_.

She is the coordinator of the project.

Exactly. So we got some things going on. But this project was created in specific south west and it was in response to the observation that there is a lot going on, a lot of individual program going on to encourage girls in the STEM fields, but there is not very good communication between any one of them. People don't really know what each other is doing. They couldn't start the project but tend to go with it. And they also really don't know whether or not it is having any impact. So there is a lack of communication and collaboration, there is a lot of resetting the wheels of things getting started and then not really knowing that the programs that we are offering are something that adults feel good or that actually encourage girls to go to STEM fields. The University of Maine, the Women's Resource Center at the University of Maine has taken a lead on this, were three years and there are a few things that are key to the program. One is that there is a national program directory that is a data base, surgical data base of what is going on with girls in STEM both in Maine and around the country. So if you want to get in the loop about what is going on and have access to a lot of the latest research, materials that are already developed, etc., all you really got to do is sign up on that program directory and you become part of the project and it is a surgical database so you could say, this is what

I have to offer, this is what I need. You know I have facility, I have faculty, I have labs, we don't have girls. You know that kind of thing to match the educators of the world with the other resources around the state. Because it is an application project and it is a national initiative, all of the programs that are being supported through this project, aggregate data is being reflected to see whether or not there is an impact in the areas where this project is. The structure is one of the things that standing. We have a leadership team which is basically the steering committee that plans for what we do and we have a champions board which is a state-wide network of people in different sectors who provide anything from support connections, resources, expertise, and so between those two bodies what we try to do is establish a network around the state so that people can have access to the materials and the programs, know the research about what is going on with girls in the STEM fields and met up with each other. We are...through our agreement with national programs we agree to do a limited number of educational programs and focused on particular topics which are the priority. The priority this second three years of the project are underrepresented girls which is girls with disabilities and girls of color, minority girls. We have decided as a collaborative once we were in Maine that our major focus areas are going to be on girls with disabilities and Native American girls. And so we have recruited people into our planning teams that in the \_\_\_\_\_ have had to go forward with that. A lot of what we are about is collaboration and so we just try to piggy back on everybody else's work and we try to make everything we do available to anybody who wants it and we do have a limited amount of grant money available to encourage project collaboration. So we have a process that where if you are on the program directory and you team up with somebody else on the program directory, you are eligible to apply for a small grant to do programming in this field up to one thousand dollars. It is a pretty easy process and frankly the only reason for that grant is very low threshold of accountability. It is primarily to get people talking to each other, working together, and to figure out how we can strengthen connections in Maine to get this work done. This fall, and if you get on the program directory you will get word of this. One of the things we are going to be doing in this state is we are going to be offering a full day conference on fund raising. We are bringing in a national author and consultant who is just amazing in doing this work. And so we are going to be inviting not only people in the STEM fields that have collaborated with us on this work but really any other non-profit or people in the state that are interested in figuring out ways that they can generate support for the programs. A little editorializing here: the potential for growth in the STEM fields career if you really look at the numbers, is having more females going into STEM fields. I think if you look at the population of most of the fields you will find that boys, men, have very traditionally and have been attracted to that, see themselves there that a career, they more naturally select. An awful lot of the challenge pneumothorax with girls is that many of the issues that scrimmage girls or that girls self-select out have to do with much broader roles as far as gender identification, where girls think they belong, where they see themselves, what kind of environment culturally they are comfortable in, and as I was saying before; many of the sciences are doing quite well. The wave sciences in particular are doing well, the hard science \_\_\_\_\_ engineering not so much, computer science is going down. And so we are partnered with the Girls Collaborative Project is also partnering with other national organizations like ASW which does research in this work of why girls aren't in the STEM fields, where they are

and why they are not coming into the STEM fields and so the online resources that we have cover everything from the latest research to hand-outs to brochures, articles. So plugging into our network gets you access to a lot of the material that is already in the \_\_\_\_\_. I think the biggest challenge in doing this work is that I think that there is just some extent of reluctance or skepticisms that initiatives that specifically reach out to girls are, you know, suspect, or not needed or whatever. The Girls Collaborative Project does not exclude boys from our program. So if boys come that is fine. It is just the way we go about publicizing the work and the focus really is on girls. I just need to comment that I was willing to start this morning with all of the conversation that gender is really invisible in the conference in terms of the material and the speakers. The only place they show up, really is in the pictures and we were looking, over lunch we were looking at the executive summary of with the findings were, let me see if I can find it, and if you look in this executive summary about student performance and that kind of thing, things that they identify as being critical, the key findings are ethnicity, economic, disadvantaged, and geography. If you look at the picture, only half if not more of the pictures are females and yet that doesn't really fit the reality of the demographics of the STEM fields. So I think that there is a certain amount of good will and good intentions and of course we want girls in these fields, but not really much understanding of how to do that or why it is necessary and some skepticism about even going at things with a particular sex in mind. So that is a little introduction, what did I leave out?

Do you have any other things about the Collaborative Project itself that we should...

(too low)

Okay, I would be happy to answer any questions about what else we have going on and what we are doing, but that is basically the work that we are initiating at the University of Maine.

So I thought we could introduce our last, or will you introduce yourself \_\_\_\_\_.

ure, Mike Griffin, physics teacher at Graden-Gloucester High School. We are in the process of looking at even here if it works out to one of our engineering technology course with a science course, an English course, and a math course and trying to do that even for a group of kids as low as 12, but conversation at lunch was focusing on girls and how to we promote that because we certainly see it skewed. Our sciences traditionally actually have more females in terms of percentage wise but they don't tend to go on as we know. But for this specifically we are aware that we may lose that population so it won't solve anything. We ended up...two of us were in the same room and I said, oh what a jungle here.

\_\_\_\_\_ not going to take it personally if \_\_\_\_\_.

So we have two topics in this room and I do think that strategies that help promote girls aspirations into the sciences are probably many of the same strategies that would help promote girls with disabilities in STEM, STEM core in their careers and actually all

learners going as well. So I just wanted...I didn't come prepared for this but I just jotted down a bunch of information that I picked up over time. In my own personal experience I don't have kids, I don't have a daughter or a son but have been teaching quite a while at various levels and I observed girls with a lot of confidence in grade school and I have observed them maintain that confidence until some time in middle school and then as they enter high school really they lose it, especially confidence in their own brilliance, their own academic brilliance where they will repress their smarts, their interest in learning, their interest in science and math, even if they have it they sometimes will repress it especially if they don't have a peer group that will support it or a teacher that will support it. So, I think our interest as a full cultural studies for girls and as the organization that we are part of is to intervene at an age when we can promote girls self-confidence so they will pursue whatever it is that they are passionate about. And if it is science then we want to encourage them there and if it is art then that is great. So there is a bunch of things that I wrote about. There are the simple things that we have all heard probably before, if you are a teacher to be aware of your language, using pronouns referring to the boys or the girls differentially, use of the word he or guys or trying to be inclusive of language or who a teacher calls on, if they are calling differentially on girls or boys because is vocal or one is taller or one is bigger or one is stronger. I think that many teachers have become much more aware of those strategies. Then we go to the media where there is a campaign right now, there seems to be a lot of money behind the color pink and sometimes the color pink is put on a shirt with the expression that says I hate math. It is crazy. So there is the strong pressure that girls are being subjected to that is anti-intellectual, anti-math in particular, and the whole lego thing that came up where legos are now being marketed to girls and boys and in separate areas of or separate sections of the isles where certain colors are for boys and certain colors are for girls. Girls legos are, what are the activities...

Shopping and makeovers and those kind of things.

So that is another example of providing another alternative to that media. I have a whole bunch of these. I am working in a school right now at Costal Studies for Girls. We hear this again and again from girls and boys such as I can't do that, I can't do that, I can't do word problems, I can't do algebra. So we try, as teachers we try to change that language from I can't and just take back a forbidden word and change it to maybe I haven't ever done that before, I haven't done it in the past but I would like to try. And there is this mindset that kids can have and it is a mindset called the girls mindset as opposed to the girls mindset of intelligence or learning versus fixed mindset. If a student comes with a fixed mindset I think that intelligence is \_\_\_\_\_ and that they are either good at something or not. They are either good at math, good at science, or not good. That is a predictor of later achievement in those subjects, or any subject, as opposed to a road mindset where students are encouraged to think if I try I can get better and that is extremely impactful. In fact I was doing research that students who were brought up with the mindset if I work at it and if I try I can improve and they will achieve much greater and will go further. I think that is really important in STEM courses. Girls like collaboration, they like cooperative learning, they love having a peer group, they love having the support of their friends and are very social. It is support that I think is very

important. Often times they will be hesitant to try something if it is doing it alone but if it is in a group they will rely on each other, they will share information, they will promote each other's learning. I have seen this in our school. I think it is one of the things that our girls...they just take off. They are in an all girl environment and they are all interested in learning and they are proud of that. It is a positive reinforcing cycle. So even in a mixed classroom I think separating out genders can help out the boys and girls.

Going on to when in role models and mentors.

Boys need the \_\_\_\_ but girls definitely use that at the end. Particularly mentor to look like them or maybe they don't look like middle schoolers but they are expandable, somehow a girl can see themselves in the mentor, see themselves in the role model. They can say that is a person I can be like, she is not way out of my league, she is not extreme in some ways, she is an engineer, she is accessible, she maybe has a family or...I can picture myself growing up to be like her. That is very helpful for mentoring.

Just to followup on the mentoring thing. I think it is particularly helpful to shrink the generation gap on mentoring and I really believe that the most effective mentors for high school girls are college students. It is that kind of...you know you bring in the first woman who ever walked on the moon, it sometimes can backfire in terms of, Oh my God that is not me, it is never going to be me, it is only exceptional women that get to do that, I am not an exceptional woman, I don't...I don't even like that. And so I think part of the challenge of doing this work is to get more complex about it, think about it differently. One of the things that I think is a pitfall of thinking about this is good intentioned people that want to support girls and do it in a way that isn't as challenging. I think it is important that we know as much as we can about gender dynamics and \_\_\_\_\_. The different styles of learning, the different ways that boys and girls see each other and then when we are dealing with kids as individuals we treat them all the same. So the whole dynamic in the classroom is there is a lot of talk about girls needing, you know, not seeing themselves in the role or needing encouragement or whatever. It is as much of a trap for a teacher to give special, you know, make it a little easier on the girls or help her or treat her even though with good intent, like she has a deficit or she needs a little extra help that the boys don't need. Because this can also translate to the girl that this isn't something she is \_\_\_\_\_ capable of or that...so some of the research they have been doing on testing lately is that if you even talk to girls about the question about whether or not girls are as good as boys in certain subjects like math, you even raise that issue, that it will have a detrimental effect on girls test scores. You know they kind of expect that they won't do as well. And so that balance of being knowledgeable and seeing your own interaction and understanding, you know we all kind of grow up in a society, we all have our own general biases because it is so built into the culture, knowing that, understanding that, understanding how that plays out in terms of different learning styles for girls and boys and then in the moment be just as challenging with the girls, just as demanding of the girls because what you are doing is you are telling them that you expect them to succeed and you want them to try to do better. It is a mind field in a way and I think the most important thing to keep in mind is it is really complex, there is not any simple fix for this because there is a real underpinning in culture that kind of traps boys and girls in

different ways, you know, from when they are born we have to know what their sex is and we know what color to paint them. And you know all those things it is much more subtle in many ways, but the accumulation messages that girls get is just as powerful as when we list the job as separately for girls. It is always thinking about the complexity of this work and doing and understanding our own dynamic I think is very, very important.

The last example I had was girls are very motivated by helping, they really like to know that their work is serving a purpose or serving a need be that for the environment or for people or animals or in the medical field, that helping purpose is very motivating to girls. So I just wanted to go back to our school which is Coastal Studies for Girls and we are observing that these girls are...it is the self-confidence it think that we are doing really a good job with. I think that they need to come from a place of self-confidence if they are going to enter into a field that they may find themselves a minority in and so any program you can do to build the girls self-confidence is going to allow that to have that resilience to be successful no matter where they end up.

How are you measuring kind of the growth in self-confidence or are they just sort of at an observational level.

We are too young to really measure. I mean we had anecdotal evidence right now but we absolutely want to measure and we started collecting data and haven't analyzed it yet. Right now it has just been in end of surveys and we have started to do...there is a center at Harvard that is, I'm forgetting the name of it, the acronym is TEAR. We get into assessment to service green post surveys a better measuring attitude toward science and we collected the data but haven't analyzed it yet. We are going to be adding more in terms of leadership and something to get \_\_\_\_\_ and self-esteem. We haven't done that yet.

How did you choose STEM \_\_\_\_\_.

Um, that wasn't my personal choice, it came \_\_\_\_\_ but it is very intentional. It is because of what I said in the very beginning when went into high schools and many of the other \_\_\_\_\_ schools, 11th or 12 grade. We are unique in our 10th grade. There are a couple of others, but they are old enough to do high school so it is a nice program but they are young enough that we want to get them as young as we can to impact all of their future...

Can I ask (coughing) thinking about what we heard this morning about this huge \_\_\_\_\_ between and have heard about for many years between elementary school and high school, with middle school children \_\_\_\_\_ obviously. Girls they are no different than boys, everybody is going over the cliff and possibly girls are going over it faster and \_\_\_\_\_. What is going on there that we are not carrying these kids through young juniors to high school and how can...I am on the outside. I actually don't practice this, so I am an observer. So this is the voice of an observer not actually someone who is doing the work. But I see what is coming up in the new standards talking about trying to get that continuum from this is where we would like kids to be in, I don't know the second, third,

or fourth grade and this is where we would like to have them 6th and 7th. And would that continue. You would think there would be some expectations that there be movement through that so that when they left there would that help pick that up. Now I realize we are talking about a situation of women, girls specifically, but it is the same in both. I think this is what you spoke of a little bit. We want all students to move and grow through this and specifically what do we have to overcome the societies of girls moving through the system especially there. But that whole...that is why I \_\_\_\_\_ 10th grade. Why wouldn't the school start if it does...

That is a great idea. I think is a very residential pole, the residential immersion affect of it is really important and I don't know that...I guess the boarding school was a pole...

My daughter went to boarding school in 10th to 12th grade and went on to be a \_\_\_\_\_ engineer where she lasted one year because there wasn't enough actually of the other issues of, Oh my God, I'm not a Geek. And you had to be at some level of immersion in science so much that everything else didn't need it, and then we are all human \_\_\_\_\_ science major but I wasn't \_\_\_\_\_ person either. Because of all the other things impact. So, you know, it is great that we have a focus in high school and I think it has been interesting...I don't know if all of you have come to the various STEM, this STEM summit for the last three years. The first year was very broad and open, it was...I say this as a great idea in a warm fuzzy, lets get going. Last year I felt like I was in a vocational/education conference. It was very much about you get this degree to get this job, that's what it was. And this year it seems to be integrating a little bit more and listening to the fact that there are teachers out her, yea there is a vocational aspect wit STEM education but there is all of the...it is not just getting a physical job you want, it is getting a career, getting a whole area of study, its getting the ability to do science technology, you know all of it. I think that is more encompassing than last year, more practical focus.

My personal feeling is that it relates to self-confidence with girls and at that is drops off as \_\_\_\_\_ comes on, so with the outside influences of unpopularity of being smart and pursuing whatever it is that you are passionate about...

So there is a biological solution either after suppressed puberty in women (laughter)...

That is exactly what...(Laughter)

So they happen at the same time.

I am saying that \_\_\_\_\_ the poor girls confidence and there has to be an emergent program at the semester school but it could be something that targets middle school girls that gives them support.

I was just thinking and going back to the idea that strategies, how do you go out and promote that we, like I said I work in the school district, that we hopefully can use some of the things that you do because you are very focused group but certainly if you can

have people come on board, families come on board and girls come on board that maybe we can do something that just keep, you know, take a slice of that and then allow our students as they go from middle school to high school to stay and kind of build that confidence. It will be interesting to see this spring with the sophomores going to be juniors next year about offering this opportunity for them to kind of be in a group, a group that they are going to be...in one sense they are going to be stuck with but, you know, it is going to be there and if you are taking a technology class, an engineering class, a kind of physics/chemistry class.

I would encourage the aspect of that is something gender divided, maybe...I would encourage mentoring peace and giving the girls specifically someone that they can connect with that might inspire them or might answer questions for them and provide a long-term resource to support them as they move through.

I think that is a...

There are some strategies too that, you know, the question put all girls in one group and put the girls in a group and the thing is to, again, going back an understanding the dynamics by gender and how important it is and the impact it has on kids and at the same time not having that influence particularly the way you deal with kids in the moment. You know, for example, you forming a group and they are going to do an experiment, you know, you rotate the roles so that the girls aren't always taking the notes. You would be amazed at how often that happens in college where you have science groups and the women are always the ones taking the notes. And you know, it isn't things we necessarily do to girls but often just the expectations they will take it on and volunteer. So it is really important to kind of keep those kind of things in mind. One of the things I have been talking about, actually a mechanical engineer with the University of Maine...the chemical engineering is the very most male dominated engineering there is and yet this engineer, all most all of his graduate students are women and he works on horses and racetracks and he works with the veterinary science people and they developed a mechanical engineering model of a horse that replicates and of course we have the farm at the University of Maine so there are horses. There are 14 mares there and there are women, almost exclusively that are in that farm taking care of those horses and they are in veterinary science, in biological science, they are in pre-vet, but they are also, you know, come to that because of some of their background. Because girls they say at an earlier age, boys get the tractors and girls get the horses kind of thing. And there really is kind of an appeal to young women about horses. So what he is talking about is in like high school horses of developing alternative problem sense that appeal more to girls. So if you are talking about, you know, engineering, you know, tying it in with veterinary science and how engineering is used in veterinary science to work with animals. Veterinary science is a field that is very \_\_\_\_\_ because it has gone from being about 80% men in 20 years to being about 80% women. So there is something truly interesting going on there. And going to that barn and seeing them put the engineering together with horses gives them a different access point in terms of thinking about something they want to do, because here is mechanical engineering what do you think; machines, gears, you don't necessarily think horses or whales. That is another area of

mechanical engineering is getting in is sensors with whales and you know with these off-shore wind things and what is going on. So looking at the aspects of the field that aren't so gandered like those kind of traditional sports or construction or whatever those kind of traditional problem sets that are associated with that field, expanding that. It gives kinds a broader idea of what you can do in a particular field and it doesn't bind the stereotypes as much. And I think that is really interesting hearing these women talk about, you know, their engineering work and testing the surfaces of horses and seeing the, you know, there are just a whole lot of ways we can kind of recast some of these professions in a way that appeal to different aspects in peoples personalities. That is one approach.

What is use to do with Center Valley students think about STEM. What did we use for ideas when we talked about money, these are high paying jobs, do you talk about prestige, these are doctors, the engineers of society and then the \_\_\_\_\_ girls side is having enough representatives of those people. I like what you said about to bringing in the one woman astronaut who might walk on the moon, that is the Holy Grail, that is like bringing in Warren Buffet into a business class, they are not all going to be one. So having both but having many of them is really a chicken and egg thing. When we are talking about the fact that women haven't been, shall we say, haven't been allowed into those roles or having been presumed that there is less mechanical engineers that are women, so how do you bring, and you should really just go out and find them. So if you do bring people like that in your classrooms as, even college students, you certainly want to be aware that you are bring in an equal proportion at least.

They say it takes about 30% of the population to shift it so that...and that is a critical mass, you know, so that it isn't perceived as being...

So if 30% of our presidents had been female...

Then it starts to tip the perception of the field and it also changes the culture of the field which, you know, is part of it. If you think about the individual women who go into these fields. You know, sometimes these are the women that just feel more comfortable with men and so that is...those are sometimes the reason why we don't get that critical mass because there is, again, perception of this is the type of woman who belongs in this field. I think the thing to do is just everything you can all the time. You know, picking up strategies and not looking for a magic bullet or not looking for...this is going to work. We are fighting a cultural expectation and socialization that kind of really is very, very entrenched and very difficult to cope with and so the more we can balance that...

I actually agree with you. It just stuck me and I can't help but think this is true. I think about some countries in this world where women are nearly just compared to ours and yet there are female doctors. What has happened to allow those people to get out from under that.

Well there are a couple things going on. One is in some of those countries those fields aren't the valued \_\_\_\_\_ that they are in the United States. The other thing is we give ourselves way too much credit for being on top of those kind of things because if you line

us up against a lot of countries we aren't doing that. If you look at how many countries in the world who have had a female leader, for example, we are very, very low in industrialized, even non-industrialized countries for the proportion of women in leadership positions. I think Iran has more women in their government than we do proportionately. So there is a little bit of, I think, complacency about how we are doing really well when we haven't really made any movement in the last 20 years. You know, women made a lot of gains in terms of the law and language and expectations from the late 60s early 70s up until about 1990. The statistics have not changed very much since then. It has...

The economy was good, why do they want to push it. I mean lets face it, the economy is good, life is good, why do they...you are going back to unfortunately the gender bias but there are other countries...the United States is you know economically, we have a lot of...look at the State of Maine, you know, for I think, I think that obviously the last 3 years has pushed us on the recession piece but there is still over...well I mean well we can get into that sociological piece. But I think in terms of comparing ourselves to the world, we still try to educate everybody and that is a big task.

Well you know I was talking with the PI who answered the collaborative project and it is why aren't there more people going into computer science, I mean that is the future. And she said she talks to kids sometimes and talks to people and they said all those jobs are being outsourced. It is like the telemarketing might be outsourced but a lot of the intellectual development; Microsoft based in the Seattle area just built a new plant across the border in Canada and hired 10,000 people because they could not get people in the United States who were qualified to fill those positions and one of the ruminating factors was the immigration, that they had already imported as many people from other countries as they could and so they were limited from bringing more people in. They had all these jobs so they basically built this plant, like two hours away across the border, so that they had an altogether different kind of pool that they could draw from. So, you know, an awful lot of these things are very systemic and one thing kind of feeds another, you know, and there are a lot of misperceptions too. Another thing that is really difficult is that if a woman goes into a field and she is isolated \_\_\_\_\_. There is a lot of resentment still in the male dominated venues for women to show up. I had a call, I'm going down to Maine Maritime Academy in a week or two because faculty there want me to talk to them about being such an isolated woman in a male field and it is, you know, anything from gross drawings on the chalk board when they walk into the room to rolling eyes to lack of respect. And a lot of this is really based on expectations where we are use to seeing women, where we are use to seeing men and the respect and the support of those people. And...

And we are switching at home...(Laughter)

And the other thing is that I just need to put this in; it gets confused is the experience of girls and women collectively versus the individuals because we can always find a girl or women to challenge \_\_\_\_\_. They are doing well, they are really functioning, they look \_\_\_\_\_(background talking) we are not there for earning less, we are not in congress,

we have lost ground in many areas where there is \_\_\_\_\_ to have and so it really is a societal problem \_\_\_\_\_ everything.

Thank you for your attention. Please register with the program director and then you will be getting notices about \_\_\_\_\_ ones that we are doing and you will also have access on line resources of this project are very extensive. So (background talking)