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Leading Practices for Improving Accessibility and Inclusion in Field, Laboratory, and Computational Science – A Conversation Series

Transcript of keynote talk by Dr. Michele Cooke

NOTE: This is an unedited transcript of a keynote presentation prepared for the Accessibility and Inclusion in STEM conversation Series held on February 10, 2022. The transcript was prepared by Jane Epiles (of Purple Communications, LLC) and reviewed by Katalyn Voss (NASEM) and is not an official report of National Academies of Sciences, Engineering and Medicine. Opinions and statements included in the transcript are solely those of the individual speakers at the Accessibility and Inclusion in STEM conversation, and are not necessarily adopted or endorsed or verified as accurate by the National Academies.

>> DR. COOKE: Hi.

I'm Michele Cooke.

And I'll be just voicing from here on out.

I am she her pronoun and as visual description, I am a white woman with brown and gray hair about shoulder length I'm wearing a black shirt with a patterns on it and black sweater sitting in my blurred home office.

And I have a press professor geosciences at the university of Massachusetts.

I really want to thank the academy for putting together this important series of talks.

And also for giving space for this will complicate issue of field access ability.

And I'll emphasize as others speakers have in this series, that my point of view is mine alone based on my perspective and I'm very excited that this recorded talk will be adjacent to the talk of Dr. Marshall who has done incredible work on making field trips accessible.

This image you are seeing here on a left is artificial

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intelligence art created using the words of this series,

leading practices for improving accessibility and inclusion in

field and laboratory science.

I thought it was interesting interpretation of those words.

Also, I'll point out I'm using real time auto captions which

is built into PowerPoint.

You can also access the transcriptionist produced captions if

you click the button at the bottom of the screen.

I'm including real time captions just to show it's really easy

with a click of button you can get real time auto captions for

any presentation.

Although I'll also point out that they are prone to error and

more greater error than a human transcriptionist.

So if someone requests caption you should also honor that by

hiring a transcriptionist.

If someone requests an interpreter you should hire an

interpreter.

But for all other presentations why not add real time captions

to every presentation.

So there's my plug for that.

So I wanted to start with why perspective I have to share.

I mentioned that I am just one person.

So I wanted to tell you some of what I've done in the past

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that has led to my current perspective on accessible field trip field work and in geosciences.

When I was an undergrad I was a teaching assistant who was asked to work blind student who had enrolled in introductory geology class.

So I was senior at the time.

And she was in the class and it was clear that the lab and field trip materials were not going to be accessible to her.

So professors hired me to help her out.

I guess he was thinking put the deaf one with the blind one.

I don't know.

Not sure what his reasoning was there.

But in the course of that I had no structure, I had no resources.

We just worked through things together.

And I learned a lot.

We tried that things didn't work.

We changed we pivoted.

I learned a lot from her about what works.

And I recognize now in retrospect that that was actually a really great experience and opportunity for me.

Because I wasn't the instructor.

I didn't really have preconceived notions on what the way she

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should learn things.

And so it became more of a partnership of working together to learn the context.

At the time it was a little overwhelming but I see it now as a great opportunity.

Then, when I was in grad school I was involved in a project to adjust introductory geology field trip to be accessible with a folks with mobility impairment.

So I was involved with the disabled student group on campus.

And became friends with folks, there's an image here on the left, black and white picture it shows four people, two are sitting on the ground next to a bin full of rocks.

There one person sitting in a wheelchair, and then there's one person standing leaning over and younger version of myself standing and leaning over and picking up a rock.

And one of my friends who sitting in wheelchair in the picture told me at the time we were talking about what I was studying a Ph.D. student.

She said you know geology sounds really interesting.

But I would never take a class because it's inaccessible to me.

I was like well, heck we need to change that.

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Like this is ridiculous that you can't take a field trip.

So with her guidance and help, and also the guidance and help of 2-grad students, one of whom is sitting in this picture he's wearing the played shirt and sitting next to the bin of rocks.

And him and another grad student, we redesigned all of the introductory field trips to be accessible.

And it was a successful in that my friend sit in wheel Claire here she ended up double majoring in earth science.

So in this way it was incredibly successful.

It was also unsuccessful in some key ways in that once I graduated and the other grad students graduated they went right back to the old field trips in and abandoned our plans and our new curriculum.

So but another benefit, so coming back to successes, another thing I learned through this was how to advocate for change and how to advocate for making things accessible.

Because we got a lot of push back in this project.

Seeing how it was sustainable also taught me a lot about access and these efforts.

Can I do have note here under picture that this was published in I think this was first paper about accessible geology field trips in geosciences.

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So another sort of opportunity I had was once I landed here at U mass and pretenure focused on doing my research and building my research record I saw that NSF had this proposal opportunity called a career proposal which blends both your research and some form of out reach.

And while it was fantastic timing for me because while I was sort of going with my research and having this opportunity allowed me to do some outreach which was to lead three field trips for teachers and students at high schools of the deaf from around the country.

And they were from all over.

We did field trips in Utah, New England and California.

And on the left is a photograph from arches national park and there's two people in the foreground.

One is younger version of me no gray in my hair there.

One is students wearing baseball cap.

We have our field notebooks in front of us and colored pencils in my left hand students also holding his pencil and I'm signing left.

I don't remember what I was saying, but I was probably giving the student some feedback on his sketch of the faults that we were sketching by the park.

So that was a really great experience to work with those

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students and especially the teachers from those high schools

for the deaf.

Most of whom were not trained in geosciences.

So that was a great opportunity.

And then of course I continued to teach field participate in
field trips.

And so I provide this just a context.

Where am I coming from?

That's kind of where I am developed.

So we know about universal design and learning which is
teaching approach that works to accommodate the needs and
abilities of all learners and eliminate unnecessary hurdles in
the learning process.

And so the question here is what is universal design in field
work then?

A lot of our efforts to make field trips accessible tend to
fit more on the retro fit approach side rather than the
university design side.

We aren't necessarily, especially prepandemic we weren't
necessarily designing field trips to be accessible.

And designing learning that would happen in field trips to be
accessible or the research to be field work to be accessible.

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We were just more retro fitting to try to squeeze people in as best we could.

So I'm really interested in the discussion we're going to have on how we can universal design for field work.

And so in thinking about this I assembled 5 obstacles I saw for accessible for accessible experiences.

Research really did work and I'm sure there's more, but these are the five I came up with this talk will kind of work on weakening each of these obstacles.

And the first one is we've always done things this way.

This was something I saw in redesigning field trips in grad school.

There's an out crop that perceived the best out crop you have to get your hands on them.

There's no way we're going to change our field trips.

So that outcrop is no the involved.

That's very strong view in a lot of people's ways or we always camped.

We're going to camp because everybody likes it.

We've always camped in tents and that's what we're going to do.

>> DR. COOKE: The second one is glorification of challenging field conditions.

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A lot of geologists like to talk about the time they were in some remote place taking the helicopter, getting dropped off having to climb 4,000 feet to get to the outcrop.

This sort of that is part of culture of field-based sciences.

Which leads to the third one ableism and discrimination and harassment of disabled folks.

But this becomes amplified in the field where you also got a culture of sort of glorifying ability.

>> DR. COOKE: The fourth is I put this in quotes, misconception I don't have any disabled folks in my group, I don't need to change anything.

I would say you don't think you have any disabled folks in your group but you probably do.

And then the last one is resistance to disclosure.

Which is related to the second one.

Why are we not disclosing?

Is if being lots of reasons not to disclose.

But what can we do to make it safer to disclose disability when being involved in field work.

So these are probably not new to you.

I'm going to sort of go through and by the end of this short talk have given tools for how and approaches for how we can weaken these obstacles.

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So we've always done things this way.

This one is -- there's a lot of great ways we can sort of resist this obstacle.

This image I'm showing from a recent paper that points out how the it instead of leaky pipeline we should thinking of it as a hostile obstacle course.

The image shows a white male presenting person in business attire on the left and he's ascending set of steps and has to navigate around some safety cones and there are some arrows showing him which way to go in his path up the flight of steps.

And on the right is a feminine black presenting person in professional attire ascending ostensibly the same of steps.

But this time the steps have spike and Barbed wire and traps and spheres and a fire and some of steps are damaged.

And image is conveying this idea while it is same flight of steps it's a different environment that one is climbing them.

And of course, in context of our conversation we can thinking people about intersection of disability and other minoritized groups while the person on the right has very difficult path ahead of her if she were also mobility impaired and used mobility aids the path would be impossible.

So just -- yeah.

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>> DR. COOKE: So we've always done things this way, we probably shouldn't.

As you all probably appreciate.

The other reason is something that other keynotes have brought up underrepresentation of disabilities in STEM and I'm showing the presented by another keynote and showing now graphically with circles representing sort of the population and the yellowish orange circle represent the folks within the population with disabilities at the undergrad level about 11 to 13 percent undergrads have disabilities at graduate student level 7 to 8.

When it comes to faculty and staff in STEM is down to 4 percent compared to the 20 percent of U.S. working age adults.

So we see because we've done things this way it's no surprise then that we with see sharp under representation of people in disabilities within STEM, especially -- yeah.

And I did also showing here the laws that support our accommodations.

So just pointing out as has been before that undergrad benefit from ADA but more importantly section 504 of education reform act to get their accommodations grad students can also use section 504 and fact Illinois and staff in STEM this have that

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legal support.

And ADA accommodations at that level are not consistent
between institutions.

Or less supportive.

Glorification of challenging field conditions.

So I grabbed these two pictures from the website of one of my
alma maters so if you must see you can find which had school.

And in this it just shows how department promoting itself in
these photos.

And the picture on the left is a picture of a tent on a ridge
and in distance are rugged mountains in the distance.

And there's not much vegetation around.

And photo on the left a group of people walking through a
narrow cleft in the rocks with sea in the distance.

It and looks pretty steep slope down to the sea.

And so what the department intends when they use these
promotional images for folks perspective, students to look at
the go wow I want to go there I want to be part of that group.

But the message that they might be getting is you know, when
people see that tent they might be thinking I might be think
if I go there how am I going to recharge my assistive
listening devices.

If I use medication I might be thinking how am I going to keep

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my medication refrigerated on this trip.

Or there's no vegetation I might also be thinking how am I

goes going to use the restroom.

Or I might be thinking how am I even going to get to that

cleft in the rocks.

So these are the questions that haven't typically been part of

the community.

Communities have to self perpetuate the idea of these images

drawings that people like them to at field without reasoning

how to those that haven't been a part of the field.

And so this I have another image here, it's an old black and

white image with people in sort of clothing from probably 100

years or so ago U.S. geologic survey field topographic mapping

crew.

My point here is the exclusive nature of field work is

perpetuated by leaders who don't recognize their blind spots.

If field work is field leaders are thinking about the

struggles they personally have had in the past with field

trips they are not necessarily thinking about the folks who

need to refrigerate their medication or charge their assistive

listening devices and other accommodation needs.

>> DR. COOKE: The next bit is ableism.

And I find this definition of academic ableism particularly

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helpful.

I am showing an image of front cover of the a book by that name academic ableism.

This book, he has a made it available for download for free and it's very readable.

So highly recommend reading this if you haven't.

He's one of my favorite quotes from the book.

The ethics of higher education still encourages teachers and students alike to accentuate with ability, Val rise perfection and stigmatize anything that hints at intellectual or physical weakness.

So while ableism is part of our culture it is even amplified within higher education because our metrics of success are so based on able bodied metrics of success.

And so this, this definition I think really helped me see just how academia is framed in a way that is harmful to disabled folks.

So this is our charge, right?

How do we weaken this and how do we make people more aware of the academic ableism all around us.

And this going to come back in another way because ableism also has a Ben manifestation in internalized ableism.

When we doubt ourselves, when we don't speak up when I don't

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disclose my disability, that's coming from my own resistance

to be affiliated with the stigma of disability.

I'm going to take a little bit of time here to talk about

where that stigma comes from.

Because I find that one of the ways to think about reducing

that stigma is to put names and see where it's coming from so

I can push it further away from me.

So the abled gaze western literature uses physical disability

upward expressions of character flaws.

Here's an image captain hook from the Peter pan movie.

And so that's just one example.

The bad guy doesn't have a hand and instead has a hook.

And this is an outward reflection of his character flaws.

We see this all the time.

It's everywhere in our culture this other disability.

We also have that Jew day Christian text affliction comes from

sin or deviation from righteous behavior.

And disabled folks like me encounter that all the time.

What's first question we get if we disclose our disability?

What happened to you?

How did that happen?

And people want to know what did we do wrong.

Who made sin where is the deviation from righteousness.

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But they want to know what happened.

Sometimes stuff happens.

And there's no reason for it.

And people don't recognize that question as a microaggression.

It's really coming from this idea that somebody must have done something in order for a disability someone to have a disability.

So both of these promote the stigma of disability.

Both of those aspects are around us all the time in the U.S.

So we're not going to change all of this, but what we can do is just recognize it when it comes up, when someone asks us what happened to you, we can say, there you go.

You're trying to figure out what, what original sin might have cost us kind of helps keep that stigma at a distance.

>> DR. COOKE: All right.

Here's a difficult one.

This is the charity model of disability and I'm showing a video clip that is repeating.

It's when Joe Biden was on the presidential campaign trail and he encountered a male presenting disabled person who is uses a wheelchair.

The person is wearing a t-shirt that says without communication there is no freedom.

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And Joe Biden is leaning over and stroking his neck and saying

your disability does not define who you are.

And this is very difficult clip to watch wave.

I believe that Joe Biden's campaign got a lot criticism from

disabled community from this they recognized it was not a

great move.

I bring this as an example to show stories of abled folks

helping the disabled don't center disabled voices.

Right?

This man's t-shirt has very important message.

But this video clip is not conveying that message.

Hero of this video clip is the guy on campaign trail that

being charitable benevolent to disabled person rather than the

important message of the disabled person.

All right we're going to stop watching that very difficult

clip.

So this framing shows up in education all the time.

Because we have this framing of able body instructors

accommodate disabled students.

This fuels charity the Ben Nevada lens model.

When you talk about disabilities in the classroom everybody

immediately picture a disabled student and ably bodied

instructor.

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In 20 percent of working age adults have a disability.

Chance ever one out of 5 classrooms the instructor has a disability.

Going Otto field trip you also got occurrences of disability will.

So I want to put this there to say we need to be careful that we don't fall into the trap of thinking about disability only on the in students and the people we're providing service to because that contributes more to this benevolence model. And also it erodes the last point that a disabled folks are experts.

If we go into field trip oh there's a person with a disability on trip I need to provide accommodation and service to them and we fall prey to putting on that benevolence role on

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ourselves of being a good charitable person, we have now not centered the expertise that they bring to this conversation.

They are the experts on what they can and can't do.

They are experts on what can work and what might not.

We really need to let go of trying to be do-gooder in this approach and really see it more as a team work between not just the field trip leader and disabled person but even the whole field crew.

More on that too.

So all of this leads to why people don't disclose disabilities.

So reasons not to disclose your disability, if you have that option, I should also point out some people don't have this option.

With my own disability, people used to pick up on it more.

But I find as I've gotten older I generally don't hear my accent in my speech.

I don't know sometimes I do.

So generally I choose to disclose.

But the reason not to disclose are what I pointed out, this stigmatism, the internalize ableism not wanting to be associated with that othering that happens in our society for people with disability, facing discrimination, facing

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harassment.

And so it's not surprising that studies have shown that only 39 percent of employees with a disability have disclosed these to their manager.

And this would include invisible and visible disabilities.

This is from the workplace, but there's no reason to think these numbers would be any different on any field trip that we're leading.

The benefits of this disclosing is well firstly you can get access to accommodation, that's the first thing.

Then also a secondary one is possible sense of belonging when the Cripp community.

So there's a lot of empowerment that could be gained from sort of joining with people other people in disabled community and recognizing our common lived experiences.

>> DR. COOKE: So disclosing even before you get to the point of deciding whether to disclose or not, there's a huge challenge in diagnosis.

Can't get accommodations unless you have a diagnosis.

And the thing is having a diagnosis is privileged within the U.S. whites with learning disabilities are far more likely to have a diagnosis than blacks with learning disabilities.

Diagnoses take time, they take money.

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And they take advocacy.

It can take years sometimes to get a diagnosis.

Learning disability can take hundreds of dollars for the test.

Then ones you have a diagnosis, access to resources is far from inequitable.

Until I got my current job at the university of Massachusetts, hearing aids were never covered by insurance.

This is a first time.

They are not 100 percent covered either.

But I got the job and couldn't believe it.

What?

You cover part of hearing aid costs.

Do I need my hearing aids for my job?

Absolutely.

Can I do my job without them?

Not at all.

But yet it was never covered by insurance.

In fact, it's why I was diagnosed in kindergarten when a kinder are in thor teacher noticed when she spoke I stopped playing and watched her.

And I'm really thankful she was well trained to recognize that was a sign I was speech reading her she recommended I get tested but my parents couldn't afford hearing aids at that

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time.

So I had to go until few years later until I got my first hearing aids which my audiologist now is shocked that would happen.

I like to think it's better now and that there's financial resources and mine is just one story.

But I just want to say, like you can't assume that everyone has access to a diagnosis if they need it.

You can't assume they have access to resources even with that diagnosis.

Okay.

Another point is spoon theory sometimes also called disability tax, sometimes also called deaf tax.

It is the idea that disabled, mad chronically ill folks spend time and energy navigating their day and analogy you have only so many spoons you start out with a day each time you need to suspended extra energy navigating your world you're taking a spoon out.

And this is all just you know, waking up, getting where you need to be, getting dressed, getting eating, managing conversations.

This is before you add the significant challenges of field work to the mix.

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And so the example I have here is listening fatigue for myself.

I noticed a few years back that some days after work with I was just wiped out.

Really useless in the evening.

So I started tracking how many meetings did I have that day.

So I started tracking how many meeting with hearing people listening meetings.

I had versus how fatigued I was.

Through this process I learned for myself I have about three hours of listening each day that I can do.

And if I do more than that I run out of spoons.

And so this means I need to think about how I manage my day.

Now if I'm in the field working with a field crew all day, that's more than three hours right there.

So by the afternoon I'm done.

But field trip keeps going into the evening.

And so what happens is just running on fumes and becoming really run down and exhausted is typical experience for me.

This is not unlike what other folks will need to do who need to manage their own health and their own accommodations.

We're all kind of putting in that extra labor on top of getting to the outcrop and participating and the energy that

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our able bodied mind folks are participating on the field trip.

So this is an interesting thought that so how do we build into field work the breaks and the down time and the recharge that people will need and that able bodied folks would benefit from as well.

>> DR. COOKE: The accommodation process, when a student has an accommodation in a classroom at the university they could work with a disabled student services, and on which there's a sort of set of accommodations that can be offered for me, it would things like captioning and maybe using a microphone and things like that.

When you go into a do field work the situations are really unusual and the plug and play accommodations that work in the classroom don't necessarily work in the field.

The disabled person unless they have experience with field work they might not even be aware of what is expected of them.

So they can't even, they can't always articulate how their needs will be best met.

And then there's no transparent process for deciding on adjusting accommodations once you're out there in the field the lead of field crew is the boss.

They are the ones that decide if something comes up what is

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reasonable accommodations or not.

And so this negotiation in the field about accommodations can be pretty tricky for folks to navigate.

And then the last point is that access is situational.

So I brought up the example before about how folks might have more spoons in the morning than they do in the evening.

And another example I was on one field trip and I was using my assistive listening device so the speaker wears a transmitter, a microphone transmitter and I have the receiver and allows me to get the sound to my hearing aids so I'm not hearing the wind and conversations and I can hear the speaker.

This particular field trip was really hot and humid.

It was kind of gross out.

The rocks were lovely.

The speaker was with sweating profusely.

It was kind of gross.

He sweated so much that his sweat got into the microphone that he was wearing transmitter and shorted it out.

So even though I had done all due diligence and charged everything and everything was set to go action I hadn't anticipated he would sweat so much.

But traps mitter died in the middle of field trip.

Yeah.

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And no insurance doesn't cover that repair.

So access is situational.

You can't say just because someone managed perfectly fine

yesterday they may not manage perfectly fine the next day.

And we need to think about the changes that can arise.

Okay.

So things that you can assume.

So any field crew will include folks with disability including

chronic illness and mental illness.

And your field work will be accessible to at least some of the

time for some of the participants and this what I meant by

situational someone might have access one day but not another day.

And another thing to assume is that the first solution you try

won't work.

I've seen this in all of my work in the field especially in

field where conditions can change but also it's a lot, there's

a lot to process on top of the work.

There's personal dynamics a lot of things come into play.

Which leads to your field crew will include folks with strong

ableist attitudes.

So as a field crew supervisor you might do your best to sort

of center the disabled person's voices and their needs and

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their expertise and decision making.

But maybe you're, large enough field group that people are often pairs.

And so if their field partner as strong ableist attitudes

that's going to get in the way of their access.

I often heard people disparaging the fitness of their field partners in classes I teach.

We as instructors in that scenario need to do our best to make it clear it is the responsibility of everyone in the group to ensure that each person has access and to sort of dispel that bullying that can happen within a field partnership.

Another example I have of the ableist attitudes that I wasn't prepared for was on one of the field trips with school for the deaf I combined my hearing college classroom with deaf high school students and we visited to get together on the field trip.

And for some of the field stops for many of them actually I would teach in ASL rather than speaking with I had with my hearing class for the rest of the term.

So different mode than they were used to.

And I didn't voice to keep the language clear he was only present in a one language ASL and interpreter was voicing for

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me.

My hearing students really didn't like not having direct

access to what I was saying.

And having to go through the interpreter.

And they balked really hard about this.

What made it even more awkward is when I would ask questions

of the group and sort of see where people were going the deaf

high school students they were phenomenal they had this

hitting all marks getting auto the concepts, they were putting

pieces together and my hearing students were lost.

Keep in mind these are hearing college students who have

already taken three years of geology compared to high school

students who were just learning it right then.

So they were so embarrassed by that too.

And you know, in retrospect I see now that they just weren't

prepared.

I didn't prepare my hearing students well enough to be in that

position where their language wasn't centered in the teaching.

So but it was also their attitudes were unexpected to me.

So I think we all learned something from that experiment.

Just a few more points here.

I mentioned before that retro fit versus universal design, retro

fit is kind of goes against universal design in that with

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retro fit we're saying oh there is someone that needs me to do something different, okay.

Oh, Jerry-rig this solution versus really thinking about how to design a field trip that is by the way it's designed built in flexibility to accommodate the situation that is come up being ready to pivot for other solutions.

And so this idea that accommodations are traditional provided through the lens of medical or functional model.

So retro fit you're looking what is your diagnosis what can you do what can't you do you're looking functional model disability where as if you move more towards universal design and centered disabled voices you can move more towards cultural and social model not person needs fixing that field trip and way is built needs to be adjusted to be more accessible.

And then this last point I wanted to bring about is what I call Crippling the lab and field and classroom too.

A radical shift happens in how we learn in research when the classroom lab and field trip are led with people with disabilities and centered experience, body mind and movement the that are outside of the norm.

The background I'm showing a normal distribution curve.

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And I'll share an example.

So on one of the field trips that I led with at deaf students

we were this was high school students.

We were measuring the orientation of a particular plane in the rock.

Rock surface would be here (indicating) and we take a compass and with the compass we take a series of measurements that then tell us the orientation of that surface.

Is it straight up and down (indicating)?

The is it dipping off at an angle?

(Indicating) it pointed to north or south?

Measure mental we can take to basically define that.

Plane in space.

And I teach this to my hearing students, college students as well.

When I teach it in spoken English to my college students it takes them a couple hours really to master this technique you have to explain it practice it, we work on it I coach them.

And I had an interesting experience teaching deaf students in ASL the same technique I was able to harness with ASL the speech and grammar that an I that way north, we're going to measure the angle close from north and I could indicate it with my hands (indicating) and show how compass would take

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measurements and talk about measurements and demonstrate it in

ASL.

And they picked it up so quickly.

They were taking measurements within a half an hour.

Actually within 20 minutes they were taking measurements then

I did a little coaching by half an hour they were taking

reliable measurements.

I am not going to say those students were exceptional they are

all great students.

There is no difference in the way they think.

The difference was the way it was taught.

Right?

Because I was teaching in a graphic a spatially based language

and they were receiving it with that context, they could learn

it faster.

And so are there ways then that I could go to my hearing

students and start using, obviously they don't know ASL I am

knot groggy teach them that.

Can I use gestures can I get them using gestures a way to

facilitate the learning measurement techniques?

This something I'm definitely trying in my own teaching.

And I use it as an example of this shift, right?

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Why teach it way it has always been taught if we start to look

at other ways to teach, we might end up teaching it better.

If we look at other ways to do field work, we we're going to

end up with better field work.

And the key to that I think, a key to that is to center the

experiences of disabled people in the field in the lab in the

classroom.

All right.

I'm going to come back to this slide from the beginning that

talked about obstacle to accessible field experience.

I tried to provide in this talk some ways to kind erode, we've

always done things this way, you know glorification of

challenging field conditions, ableism, I don't have any

disabled folks in my group so I don't need to change anything.

And resistance of folks to disclose their disability.

In this talk I've tried to provide some approach and

strategies for eroding these obstacles and I look forward to

the panel discussion where we can talk about this some more.

Thank you.