

Closing Summary Action Plan:2018.02.23.0330

Notetaker Name: Brandy Wiegers Email/Phone:brandy.wiegers@cwu.edu / 530-220-0324

Speaker's Name:

Moderators:

- Julia Aguirre (University of Washington - Tacoma), jaguirre@uw.edu.
<https://sites.google.com/a/uw.edu/dr-julia-aguirre/home>
- Francis Su (Harvey Mudd College), su@math.hmc.edu.
<https://www.math.hmc.edu/~su/>

Talk Title:

Whole Group Action Plan Development

Date:	02/23/2018	Time:	2:30-3:00	pm
--------------	------------	--------------	-----------	----

Materials:

- MTE Standards (<https://amte.net/position/equityinmathematics>)
- NCSM/TODOS statement
(http://www.todos-math.org/assets/docs2016/2016Enews/3.pospaper16_wtodos_8pp.pdf)
- MAA instructional Practices Guide
(<https://www.maa.org/programs-and-communities/curriculum%20resources/instructional-practices-guide>)
- JRME 2017 Research Commentary on Equity
(https://www.nctm.org/Publications/Journal-for-Research-in-Mathematics-Education/2017/Vol48/Issue2/Equity-Within-Mathematics-Education-Research-as-a-Political-Act_-_Moving-From-Choice-to-Intentional-Collective-Professional-Responsibility-2147123856/)
- Adiredja, A.P. & Andrews-Larson, C. Int. J. Res. Undergrad. Math. Ed. (2017) 3: 444. <https://doi.org/10.1007/s40753-017-0054-5>)
- Detailed notes from note taker (pdf)

List 6-12 key words for the talk:

Rehumanizing mathematics education, challenge, action, tools

Please summarize the lecture in 5 or fewer sentences:

Dr. Francis Sue and Dr. Julia Aguirre provide final reflections on the Critical Issues in Math Education Conference including five points to convince the unconvinced and a request to everyone to stop using deficit language. The final whole room discussion also reveals several resources that can be used to further explore the topics that were discussed over the course of the conference.

David Eisenbud, MSRI Director- Closing

Thank you to NSF and MFA, sponsors from the beginning who have been very generous. Also thank you to our local support. We have 1700 people a year going through here. Also thank you for the organizers of this workshop

Julia - Please write down an action that you plan to do

What are you going to do? We would like to collect to have a record of our ongoing work. By writing down you're more likely to follow up. You don't have to do it and you can change your plan.

Final thoughts - Francis Su.

I'm not an expert in many of these issues and I'm here to learn from you. If you are like me you resonated a lot and have been challenged in various ways. We are all here because we care about this topic but we aren't monolithic, we have experiences that we bring. I accepted because I am excited, I am not an expert and I wanted to hang out with experts who we can learn from.

My own journey to beginning to speak and write about these issues. It's hard, there are lots of landmines. I've had pushback from people who do not believe this is something. So I am thinking about **how do you convince people there is a problem to be addressed- convince the unconvinced.**

There are a lot of people who are not here - who is not here? Who is not part of this conversations? Think to yourself.

- Not a lot of research faculty. This isn't shame/blame.
- Not many Asian Americans.

Francis shared his personal experience, I encourage you to watch it. Quick summary: I have had my own share of being "other" and I've enjoyed lots of privilege and benefits. I've also grown up between two cultures - not completely accepted by Asian community and not fully completed as American. Math was a safe space for me and I felt component in math. That changed in graduate school where I didn't feel prepared and I had a series of bad experiences with advisors (it took three advisors to get through graduate school). I also had several experiences that opened my eyes to the fact that my lived experiences is very different than that of my friends.

A couple of summers ago I was the research director for MSRI-UP. The following year I was at a 3 week conference in Utah with a couple of my students. I went out to dinner with my students, it was a nice reunion. They brought their friend that was White to dinner. It was clear that they had connected as roommates. The thing that was weird at that time was 2 African American men had just been killed by police. Felt like it was a superficial conversation and broke the ice and asked them about. One student felt defeated. Other student shared his own incidents. Everyone was silent and awkward. White roommate was completely silent. I shared, "I'm sorry that happened to you". The next day the student said, thank you for listening. A couple day later the White roommate wrote to say thank you for starting that conversation.

A lot what we have heard at this conference is that teaching is more than just math. The importance of respecting people, If you can't hear people as people, how can you teach anything, education is going to just be disconnected and irrelevant.

Five points to convince the unconvinced:

1. **Record and tell your stories, make space for people to tell stories.** Tell stories of your own failures in this area. A lot of the personal stories are disarming.
2. **Self reflection not self righteousness.** I wrote about microaggression ([click here](#)). Someone wrote back and asked, "*are you going to start policing our language?*" I want to recognize, ee had a fear of being judged. I wrote back and said I was encouraging reflection.
3. **What is it that is underlying the fear?** When people feel threatened or angry then there is a underlying fear - false dichotomy of diversity
4. **Be more radically inclusive than ever** - we are the people who are bearing that burden. There is going to be a tendency to dismiss who think like us. There might be someone who is antagonistic and has a fear of the new order. if you write them off then you feed the fear in them that they aren't going to have a role in the new order of things. We have to believe the best in everybody, even if it's hard.
5. **How can you be the safe person that people will feel comfortable talking to when they are uncomfortable and need to have someone to go to and not feel judged.** They need someone to ask questions to. Some of the most effective work will happen when they want to know more and they need to have someone to talk to. It takes time and patience - how are you going to that safe person?

Final thoughts - Julia

I am grateful for being a part of this. I want to begin by realizing of the hard work people did to bring up their own stories.

I want to acknowledge the importance of professional development/ emerging scholars - there is a reason that the folks doing math work and equity work in many different programs have roots in that program. There are a whole lot of folks, folks of color, that kept us in a counter-space where we didn't have to drop who we were to be intellectual, mathematical, cultural, social in a hugely white space. I was fortunate to have an experience as a MESA (<http://www.mesausa.org/>) student - another counterspace, a place where we could go and not shed who we were. Those are the kinds of space that have allowed me to recognize that it can be done and one can thrive. There is research that shows we know what to do, we have the answers. Now it comes to a chance to recognize do we have the will and what do we value? Do we see its richness and fullness in everything that it brings?

This work anchors me. There have been times I haven't wanted to continue in academia, you get a lot of bruises. Alan Schoenfeld was my advisor so I know a lot about problem solving and I could explore my questions and work with others to explore those questions without anyone telling me I couldn't do it. There are plenty of places where you can lose sight of the reason that you're doing the work. For me, the bruises are deep and I continue the work. I want to say it for those who are going through tenure who take on this work as part of their field/theri body of work and are asked to

make choices, I want to affirm if this is the work that you are trying to do then do it. You'll have to know more than others, you'll have to know the dominant research and the other stuff. It doesn't work the other way around, people that do dominant work (teaching and teacher education) don't need to know the equity stuff. You need to know the math, the math education and the equity, all three. This means you are better. This means you are a better scholar, a better educator, and a better community member.

The road is hard, there are a lot of tears. When I went for my 3rd year review at my current institution I had the advice and was told that the work on equity and social agency work in math education is fractious and divisive for my department. My committee member told me if they are calling this into question then that is what you give them. I gave them that in my whole packet for tenure, highlighting it in everything - saying that if you aren't giving me tenure then you're doing it because of my equity and social justice agenda. These are the choices that people make.

I could do other things and make more money than this but I love the research, I love going into classroom, I love teaching, I love the new generation of students that want to do this work. Being an academic and being in math education field I get it and it's what keeps me in the game and keeps me hopeful that there is a group of people here willing to walk on this journey with us. There is things to make safe spaces and brave space. There is a difference. For people who walk into MSRI we don't feel safe ever but we have to be brave, call stuff out, and to listen, and to hear different views, and to help us reflect critically on our values.

I said at the beginning, when you decide that equity is part of your work (not a percentage but part of) you have to understand the position you bring on the work. You have to be able to articulate what that is. It's not to study others, not to be a savior or missionary or help those disadvantaged. If you go in with that then it's not going to be part of authentic work. A reason why the math story part is important here is it helps you get in touch with why you are here? It's important to reflect on that. Why does math mean a lot to you? Own up to it/ What are your biases and strengths that you are bringing to the work?? What do we need to make the system equitable. Know your positionality - what are you bringing to the work? You have to be able to articulate that and share that. Nicole and Phil talking about where they came from is what a lot of us do, talk about your ancestors before you start the conversation. We've been trained to be objective, we aren't to reveal any of that and I reject that paradigm.

I want to say that this is hard work. This is joint work. This is ongoing work. I'm hoping that with all the folks here we've set a tone and sent a message. I'm sitting here with the past president of MAA and that is pretty amazing.

Francis-I'm sitting here with somebody who has done critical work in math education and equity and I'm honored to be here.

We're happy to open it up for questions and we want you to keep actions in the front. I also want to share with you, when I first came here I was worried because the last time I came there was a tough tension between mathematicians and math educators, I could see the differences. Fresh off the math wars there was a jockeying of power of who gets what say about math. I wasn't sure I was comfortable. There is a constant smog of deficit language that we use to label children, teachers, families whose voices aren't

here and I was worried because I was hearing similar discussions about well intentioned deficit language. I was worried. The next day with the panel and first processing session, Danny and Rochelle did their plenary and I didn't hear that deficit language but that same way of categorizing the students and teachers we work with wasn't happening in the same kind of way. **If there is one thing to do right now it is to refuse to engage in deficit discourse in any professional setting. Reframe each deficit oriented label (like at-risk). Revoice it in a different way to accentuate strengths and resilience, highlighting things that other people may not see. That's an easy ask for people.**

The great thing about this workshop was captured by Rochelle, I heard a difference in acknowledging that mathematicians and math educators are working together differently now then there were 10 years ago, I feel that difference. That gives me help that we can work together as collaborators, each bringing our own strengths to solving, changing, and transforming the changes in math education that we all want to see.

Francis- one evidence I've seen lately about that is the MAA instructional Practices Guide

(<https://www.maa.org/programs-and-communities/curriculum%20resources/instructional-practices-guide>) It is a collaboration between math educators and mathematicians on evidence based practices that have been shown to be effective in the classroom. It has a whole section on teaching for equity. There is a section on classroom practices, assessment practices, and design practices. There is lots of helpful stories/vignettes about what is like to teach differently. It was just released and it's free on the MAA website. I am really encouraged by this partnership that we're seeing more of and I'm curious about other ways you'd like to see mathematicians get involved with math educators in a dream world.

Julia - What would this look like if we had a dream world - recognize the structural things. In many ways foundations will often only sanction research if you have a mathematician involved, to represent the content. It's a status thing that I'd like to see changed. This is difficult when math educators have trainings they've gone through that is different from a mathematician's training still need someone to make sure it's mathematical enough. I'd like to find a way to make it **a true partnership** - require math educator on NSF or DRK12 grant. Structural things that organize and collaborate in a way to play down status issue. Both understand what both can bring to the table so we can dialogue about the learnings that we can have from each other.

Also, understanding that what I like about it coming from the Math organizations then they have an audience that will listen in a different way. Pick people that can write those articles well and that have strong connection to equity. Make sure we have the right people to write those reports with other mathematicians for the math community. Also think learning from learning from other organizations - AMTE Standards (<https://amte.net/position/equityinmathematics>) , NCSM/TODOS statement (http://www.todos-math.org/assets/docs2016/2016Enews/3.pospaper16_wtodos_8pp.pdf). Having readings with mathematicians to get on board in connection to what we're already doing would be really helpful too.

Francis - In grad school I heard a lot of people po-poing math education as not being real science and I hear less of that language now but I wish that mathematicians learned the literature. Would love to see each math dept program, PHd Program in math, learn about math education, pedagogy, and equity. It's a shame that our high school teachers get training but the graduate students don't.

Julia - I also like the idea of the math education housed in math depts when collaboration can be strong and content oriented then you have stronger content courses and stronger pedagogy courses, one can listen to the other. There are a few places where that is situated (University of Arizona). The idea of working within the math dept context, I hope there is more opportunities for those connections.

They then thanked speakers, organizers, etc.

So, all the conversations were recorded you could start a dialogue with your department. Watch video and have the department.

Discussion

Francis I want to thank you in particular. We've talked a lot about how important it is to have role models, to see themselves. One of the things that really holds a lot of people back is that to be a mathematician/ to be a professional at all you aren't allowed to cry. I would love to see us break that. Thank you.

What are a good resources in math education. I come from a traditional math department and I didn't know math education existed until about a year ago and I'd like to learn more about it.

Julia - There is a whole field and I think it depends on what you would like to keep exploring. Depends on your question and then we could deliver resources for you.

Francis- One place to start - MAA Instructional Guide Bibliography

Julia - JRME 2017 Research Commentary on Equity (<https://www.nctm.org/Publications/Journal-for-Research-in-Mathematics-Education/2017/Vol48/Issue2/Equity-Within-Mathematics-Education-Research-as-a-Political-Act-Moving-From-Choice-to-Intentional-Collective-Professional-Responsibility-2147123856/>) which laid a lot of things that done between 2005-2017. There are resources there, ways to think about math education from equity standpoint.

Adi - I tried to gather the current state in an article in the International journal for research in undergraduate math education (Adiredja, A.P. & Andrews-Larson, C. Int. J. Res. Undergrad. Math. Ed. (2017) 3: 444. <https://doi.org/10.1007/s40753-017-0054-5>)

Deborah Ball - One of the problems when thanking the room is that you don't get thanked. I wanted to do a collective thank you... One things that I'm aware of is really careful design, when they work the design work is invisible. This doesn't happen for free. I wanted to all acknowledge the careful work that went underneath that. Also thank David Eisenbud - agency to others to create CIME. Openness and

eagerness. Quite happy to see how it's growing and expanding.

Student - I want to thank the organizers and MSRI for putting this all together and if you haven't read the commentary then do that. Also thank you Francis Su, if people haven't read the speech you gave at the end of MAA it was so good, I was moved to tears(<https://mathyawp.wordpress.com/2017/01/08/mathematics-for-human-flourishing/>) I also wanted to reflect on the space to talk to so many mathematicians, which is strange to say when you work in math ed. I don't have a degree in math, I was a middle school math teacher for 10 years. I do honor that, when people get a PhD in mathematics. It's very different and I honor that. That setting is very different than that K-12 setting and there is a lot of cross pollination that I'm looking forward to and that I want to see. In the k-12 setting we've done a lot of research to understand what's toxic and that knowledge hasn't translated in a real way to policies. Most high school still have tracking. Treisman's work. I was in MDP, it got me through a lot but I still left Engineering and we're still looking at summer bridge and nothing has really changed that much. I'm a MESA student and it's even changed to a different organization.

The other way too, I would love to see a time when professors of math worked with K12 teachers in ways that were transformative to gain access in joy of doing math that you see in the higher ed but don't see in K-12. It is hard, difficult, and rare to have those interactions with math as a tool. Rehumanizing the experience of mathematical activity. Because in K-12 we don't see that a lot, we have a lot of research on that. We don't necessarily have that.

Francis- I'm really hopeful. The interest among young people is amazing and wasn't present 20 years ago. More and more organizations are releasing statements including NCTM releasing an equity statement in May that takes a strong stance against tracking, etc. Of course, policy documents don't change people, people change people and we do have a lot of movement from math community that we didn't have 20 years ago so I think we can be hopeful.

Thank you to everyone. I want to ask the panel about courage. We have each committed to go and speak up about what is right and we've heard over and over that it's going to be difficult so because in part we have to have the courage to look at the opposition and still say what has to be said. Where do you get the courage in your own personal lives? How can we foster the courage every single time to say what has to be said?

Francis - I have thought a little about this because in giving the speech was taking a risk but what it comes down to was that low point in graduate school and in that moment I gave up a dream of becoming a professor. I didn't tell the story between the 2nd and 3rd advisor I realized I love math and I should go back for the right reason. It was the act of dying to that dream that I think enabled me now to have the professional freedom. This allows me to say that this the reason I'm in it and I'm going to do it whether you like it or not. Dying to that dream was really freeing for me.

Julia - I stand on the shoulders of other. My father was a Chicano activist that crossed many borders and I have a strong family (multicultural/multiracial) with a sense, people engage in that courage in different ways. My body - I'm tall and big and my courage can sometimes feel like a fire hose and I try not to and I'm learning but this is

what I've chosen to do and I try to realize that in those moments sometimes in that moment I say the right thing that I thought should be said and sometimes I have to come back around, circle around and say it. Either way it has to be said. There are multiple ways, multiple settings, and multiple levels to do this work. You need both voices (Martin Luther King/Malcolm X, Cesar Chavez/Dolores Huerta). You need all these kinds of voices - people in the front and people who did other kinds of work, just as valuable, and could make other people listen. The more voices the better off we are. That diversity towards the path is what is going to make it work. Brave space (vs safe space) is important - this is the time I am needing to be brave and to have those hard conversations. I'm finding better ways to do it.

Adi - We're out of time.

Francis- From -Martin Luther King, Jr.'s speech, Awakening. He's talking about how science has advanced, technology has advanced, where are we?

Through our scientific and technological genius, we have made of this world a neighborhood and yet we have not had the ethical commitment to make of it a brotherhood (and sisterhood). But somehow, and in some way, we have got to do this. We must all learn to live together as brothers (and sisters) or we will all perish together as fools. We are tied together in the single garment of destiny, caught in an inescapable network of mutuality. And whatever affects one directly affects all indirectly. For some strange reason I can never be what I ought to be until you are what you ought to be. And you can never be what you ought to be until I am what I ought to be.

-Martin Luther King, Jr.

<https://kinginstitute.stanford.edu/king-papers/publications/knock-midnight-inspiration-great-sermons-reverend-martin-luther-king-jr-10>

Thank you for spending your time with us.