

# Episode 61: BrainSTEMology with Alex Flowers

The Michael Eure Show Podcast

INTRODUCTION: Hello, this is Michael Eure, and I'd like to invite you to the Michael. Eure Show featuring student hosts and very special guests talking about a variety of interesting topics. You can find us on the Eagle Stream YouTube channel.

MICHAEL EURE: Good evening. Welcome to the Michael Eure Show.

We have some very special guests here today and the show was pretty full, so we're gonna do stuff just a little tiny bit differently.

And first of all, we're gonna start with Valentin Hernandez-Martinez, who actually has met our speaker once and he wants to say a few things to professor Flowers.

VALENTIN HERNANDEZ-MARTINEZ: Well, hey everybody. I'm Valentin Hernandez-Martinez. I'm an engineering student at Wake Tech.

I'm in my second semester and I'm also the Vice President of the History Club, so I'm kind of in both of these kind of activities.

And yes, plus Mr. Eure said I met I had the opportunity, I was lucky to meet professor Flowers last semester.

It was through a meeting that Wake Tech organized and it was really cool because, like, we got to talk about the whole things that are happening in the Community right now about science, technology, career opportunities, all of that. So, it was wonderful.

Like for the audience, I just wanna say that. Please listen to what Professor Flowers have to say. And he's gonna contribute a lot to the community. And he's also very intelligent man. So, we're we're lucky to have him as a guest today.

Thank you, Valentin.

DAMIEN JOHNSON: Mr. Eure, you're muted.

EURE: Thank you.

I was going to say that I also got to meet Professor Flowers last semester, and I did get to see his presentation and I know it's gonna be excellent.

And one thing he talked about that caught my attention was he talked about Ron McNair. And Dr. Ron McNair is a graduate of North Carolina A&T, and he is an astronaut, well he was an astronaut. He perished in the Challenger that came down in fire, but A&T has an engineering building named after him.

And I know you will talk about him. He taught martial arts, and he played jazz, and I got to meet him. So, that was a great, great opportunity.

So, I connected with Professor Flowers because we had that in common.

Jerry, if you want to, can you pull up his website for one minute? And if not, I'm sure he'll get to it later.

Alright, so Jerry, okay, so anyway, this is the website for Professor Flowers' organization, which is BrainSTEMology.

And if you could just across the top, Jerry, you're looking through, that's good. And just click across to about, and then we're just going through the different sections just to let the audience know that all those things are there, and then they got a lot of cool stuff.

And then the next one. And all of this is gonna be put in the chat, we just want the audience to know that it's gonna be there. And I know that Professor Flowers is gonna talk about all that more.

And the last one that I'm gonna get you to tip on other than the STEM [indecipherable] is gonna be this manifest and that's the last one I want you to show.

And then just please put the entire thing in the chat. And now if we could, have Jenny because Jenny is awesome with DEI.

And I went to a jazz concert here today that DEI was sponsoring, and it was awesome.

And y'all, we're also a sponsor for the African American Cultural Celebration and for Wake Tech's Black History.

So, tell us a little bit about DEI.

JENNY AGUILERA: So, the DEI Council is for diversity, equity and inclusion. So, the main focus is to make sure that all students are feeling seen and heard, and more awareness is spread about cultures and different kinds of people.

As you said, DEI is currently doing a whole month of different black history focused events. They are on Extra, so if you want specific times and dates definitely go there.

I know the next one that's coming up is the Art of Storytelling Through Hip Hop on February 22nd, at the Scott Northern Campus in Building E.

And every Friday there's gonna be some HBCUs for students to learn about, especially if you're transferring soon. So, they have it set up for every Friday this month for some HBCU events.

And yeah, so we're super excited.

We did have that jazz events today and a lot of students were super excited for it.

And earlier we had, on February 7th, we had More Than Skin Deep, which was on Teams. And I think there might be a recording of it floating somewhere. If there is, I'll definitely share it, but yeah.

EURE: Thank you. Thank you.

And now we're gonna do a video, Care Center. And when it's over Valentin and I will be gone. And then Damian and Taj will be taking over as a student host.

And Professor Flowers, you can go through your presentation. But thank you again for coming.

[Care Center Video]

*The Care Center is here to provide wrap-around services for our students for when the classroom challenges arise. I'm Mike Coleman, Dean of Student Engagement and Impact here at Wake Tech.*

*My name is Magdalene Crist and I'm a student at Wake Tech in the associate of science program.*

*The Care Center at Wake Tech has been a great hub for resources such as food success, coaching, technology, support, brief mental health counseling, emergency financial assistance, and transportation assistance.*

*I've gotten a lot of great help with questions and I just navigating Wake Tech. If I'm ever having a tough day or a tough time in class. The Student Success coaches are always there to help me whenever I need it.*

*Students can connect with us by visiting one of our locations, online at our website, or by email.*

*So, to my fellow students, if you ever need help with anything, the Care Center is your one-stop shop and I highly recommend.*

*And most importantly, we are here to support our students and make sure that they soar.*

JOHNSON: Alright, thank you so much Jerry. Thank you for the video. Thank you for the Care Center. Make sure you guys check that out, per usual.

We're gonna start off with some introductions. I'll add actually just start off with Mr. AJ Flowers, here Dot Scholar, if you wouldn't mind introducing yourself as the star of the show.

ALEX FLOWERS: Sure Damien, my name is Alex Flowers. Also go by Professor Dot Scholar. I'm the CEO, founder of BrainSTEMology.

I've been in biotech, chemical sciences, clinical research for the past 20 years. So, my goal is actually help recruit, educate more youth about opportunities within STEM, especially for minority students.

JOHNSON: Wow, thank you so much.

And we cannot wait to get to get to, you know, all into that [indecipherable] slideshow and such.

I'll start off with myself as another introduction. My name is Damien Johnson, everyone... a host on the show. It's my second semester here as a Wake Tech student. I major in the associates and engineering and such.

And I kinda come up on this show to, obviously, interview people like Mr. Flowers to get an idea of where they fall in the community, how we can all be a part of what they're part of and just to kind of inquire about what they might be doing.

But I'm also appear with Taj, who is a host show of mine. So, Taj, if you don't mind.

TAJ HEWITT: Yep, Yep. Thank you, Damian.

And like you said, I am his fellow co-host and unlike him this is my last semester Wake Tech. So, I'll be heading out soon.

But you know, I'm a student associate in science, and you know, I just wanna say it's great to be able to come in here and interview someone like you, Professor Flowers.

I checked out your website and I mean it was incredible. I listened to that 5-minute piece that you had on the front page, and it reminded me of, I don't know if you know, who Nujabes is, he was a Japanese DJ. Very popular back in the 90s, but it was a similar style, and I'm very interested to hear more about BrainSTEMology and exactly how you created that.

So, I'm gonna add a little and it over to Jenny now.

You're muted, Jenny.

JOHNSON: I would say, Jenny, you might be muted, I think.

AGUILERA: I'm Jenny Aguilera. I'm in my second-to-last semester at Wake Tech.

I'm a student government senator chair, along with DEI Council student representative.

And so, I'm thoroughly involved around campus and I'm studying to be a biology teacher, so I thought it was super cool how you associated parts of the brains, the

different parts of, umm, you know, you called your STEM experts and health professionals, the mid brain. Which is, you know, responsible for vision and hearing and, you know, that kind of stuff. And it just goes down.

I thought that was super cool and I recognize it immediately and I was like, that's so cool, I just learned about it, and it was very brilliant. So, I'm so excited to learn more about the entire program.

JOHNSON: Thank you so much, Jenny.

HEWITT: And so, I guess Jerry, you can go ahead and get those slides up, you know, we gotta give some context for the viewers.

Alright, Mr. Flowers, you can take it away from here and show us what we're looking at.

FLOWERS: Alright, sure.

So, this is the introduction.

Lot of people don't understand BrainSTEMology is, so I call it the miss-education of BrainSTEMology, since I was a big Lauryn Hill fan.

So, you wanna queue the music?

JOHNSON: They may not be queueing the music yet.

FLOWERS: It's cool.

JOHNSON: What song were you gonna play? It was a Lauryn Hill song.

FLOWERS: Actually, this wasn't gonna be a Lauryn Hill song, but it was going to be an instrumental.

That would just give you a little give you a little background about me.

So, I said I can't complain the time the cost to get a bachelor's when my family worked 40 years for free, just to get my masters. So, matter of fact, I'm chained the two behind my farm D. Let me explain the difference between me and you, see that just say affirmative action. It makes my [indecipherable] few so when it comes to these grays, get these eggs to prove the who.

If this thing was like the boot, this point of mine had been moot. When it came to see you, I would have went to FAMU.

So, next slide, let's get it.

JOHNSON: That was fly, that was great.

FLOWERS: Let's get it.

So, I'm actually from Chicago and I actually stayed at about four or five blocks away from Carter G. Woodson, the library that's named after him.

But then my time was just growing up in Chicago, I learned that I had so much more in common with him than just the location of my family heritage.

Next slide.

So, my sister and Mom always said, you know, we love to story tell and a picture could tell a lot of words. So, it actually, like I said, it started back in Chicago. I was studying on the bus.

You can hit the next.

It's gonna pop up like a little story.

I was sitting on the bus. I was actually studying for anatomy exam. Like you said, Taj, I'm close to the end of graduation and I wanted to do well. So, I'm sitting on the back of the bus by myself. A guy gets on the bus, he sits probably 2 seats in front of me. He sneezed, and I say God bless you, and immediately he turned around, he said. I don't know why I'm telling you this. I probably have a son about your age. I just did heroin in front of you and I need to get off this stuff.

I don't know how to do it, but I need to get off. And I immediately was floored, because I'm like this is my birthday, February 22<sup>nd</sup>. Nobody told me happy birthday and now this man hits me with this deep confession about his life.

And I said, okay, next might pop up.

Alright, so his name is Tony.

Let's hit the next one.

I had an anatomy professor, and he told me, you know, once you think about your purpose. Because always was taught that you know, science and theology didn't go together. Either you believe or you didn't believe. Especially when it came to evolution.

So, I really was drawn about what's my purpose? What am I here on Earth to do?

Next.

So, there's anatomy professor, as I said. You can actually do both. He encouraged me to do both, and it was my chemistry professor that at the same time introduced me to some research programs which I never thought about even doing. I never heard of summer research programs and he submitted my application to Northwestern University. And when I was at Northwest University, I was the only student that was actually invited to come back the second year.

And this was students from Yale, from Harvard. I'm from a rural small liberal arts school called Saint Xavier University, that not many people know about.

So, hit the next one.

They had actually invited me the second time they come back the second summer. I actually learned how to develop peptide sensors for lead, so I was like oh wow lead is in our paint there on the tracks and everything, but they cost neurological disorders. It leads to Parkinson's. It leads to Alzheimer's. Wow, this is something that I can actually get behind, and I don't necessarily want to go to medical school. Maybe I wanna go to pharmacy school so I can learn about these different medications and how they work in the body.

So, next slide, next part.

So, that introduced me to an actual success program advisor. They told me, do you know about the Ronald E McNair Scholars Program? And I was like, no, never heard of it before.

This counselor was like you need to apply, apply to this program and I believe it's going to open up doors for you.

So, I get in 2003 at the University of Tennessee Health Science Center in Memphis. I'm studying in call pain inhibitors. It's actually what my grandmother passed away from, from Alzheimer's.

This was a new drug that researchers were working on to try to solve Alzheimer's. So, I like, now I have a purpose. You know, I'm, I feel like I'm actually contributing to my community, but also to my parents and to my grandparents.

Next one.

Since my mentor was actually African American, he was actually first African American that I studied with, and he was actually over the graduate program at UT Memphis. And he introduced me to Dr. Brown, who was also from Chicago, and our schools, high schools are rivals, and they wanted to connect us because of that relationship.

But he was the first person to tell me about this idea of every drug is not going to be right for everyone. It's not going to be a one size fit all. It's gonna be called personalized medicine, especially when you came to cancer research. It's all personalized.

So, I said I need to learn about pharmacogenomics.

Next slide.

So, I went into college on 1st year academic probation, unlike many of my peers. I had no idea that I was going to be able to turn my liabilities actually into my asset.

So, before I left college, I left with leadership opportunities. I left with scholarship and I left with research.

So, this first picture is actually with me, with my girlfriend. She's on that far left side. She actually became my wife, became an attorney. But she helped me start up this honor society, and it was the first national academic honor society on our campus. And it was predominantly founded by African Americans.

So, I'm very proud of that opportunity to use my science background to help me to bring about leadership here on campus.

That second opportunity opened up for Who's Who. I was selected by my professors to actually see if I can, actually if they can actually select me as a student to be for the Who's Who. I never thought about being in Who's Who. I didn't feel like I was smart enough to be in Who's Who.

So, that was one scholarship achievement that I made in college and then last one was research.

I went into college like I said, not thinking about doing research at all. And now I have the opportunity to do research at one of the biggest universities in genetics at University of Nebraska.

So, I always saw them, you know, playing football, but I never thought about going there and doing research. So, I was really proud of the opportunities of being able to turn what I consider my liabilities into my assets.

But everything is built on relationships, so next slide.

While I was at the University of Nebraska, I studied in a research center that was called the George Beadle Center. I had no idea really who George Beadle was necessarily, besides the building named after him.

But I applied to what was called a prep scholars program that it was geared towards helping minority students pursue Graduate School or Doctoral training programs. And one of the individuals that I end up interviewing with what's called, her name was Dr. Lucia Ruffman Dennis. She actually knew Dr. George Beadle because he was a Nobel laureate while he was at the University of Chicago, although he went to undergrad at Nebraska.

So, when she heard that I was studying, doing research in a center named after him, she educated me about who he was. And I was just like, wow, I never knew.

So, as you can see, this is a much younger looking Alex, I had some twists back then. That's when I had some butters, right?



But in my lab was this child prodigy, his name is Sho Yano. Now he's Dr. Sho Yano. But Sho was the youngest person to be to receive his PhD and MD at the University of Chicago. He received it at 18.

I'm in the lab being trained at trained with him, running, let's see, northern blots western blots and he was 13 years old, teaching me how to run these very, you know, extravagant experiments.

And I was just floored that I had this opportunity, but everything was really being built on relationships.

Next slide.

So, as I said, all of these relationships open up for me to do research, so every university that I went to and had a relationship with, they actually wrote an article about me.

So, this first one is called Someone to Watch. That's at my undergrad, Saint Xavier University. I became an ORISE fellow. That picture is with me inside the chemical engineering department at the US EPA's office.

So, I'm learning with their chemical scientists on how these different drugs end up in our groundwater, and they can, you know, cause just problems within our health within our drinking water.

This middle picture is actually when I went on to earn my master's degree at Roosevelt University and I became, I was one of the first students selected for their minority health international research training program at the University of Cambridge.

I never in, you know, never thought that one day I would be studying at Cambridge.

This little bottom picture is at Cal State Fullerton University. They actually did an article on their website of me there in the lab right at the University of Cambridge. I end up getting a co-authorship with the researchers that I worked with in that lab.

I was only there for about 3-4 months but was able to get first co-authorship with my peers because I helped design one of the experiments that led to solving a problem.

And then last but not least, once I decided what school I want to pursue pharmacy at Campbell University is when I came up with this idea of BrainSTEM and when I sat in the class, I realized that there weren't many African American students, regardless if they were male or female.

And our teacher played a hip-hop artist rapping about neurobiology and a light bulb went off with me within seconds, and I said that's it.

That's the idea of how we can get more minorities interested in STEM.

Next slide.

While I was in my Doctorate program, everything went up and down. I had good moments. I had bad moments. As you can see, I was very determined to do well in STEM for my family, for my heritage and for myself.

But on my last rotation, on my P4 year rotation, I learned from my peers that I had about 30 to 40 interviews for residencies for fellowships. I was like in a top of that graduating class for interviews at, it's called a PHA mid-year. It's the largest pharmacy conference that they have every year where students, post docs are trying to get positions, once they leave pharmacy school. And I had about 30 or 40 interviews with the top to tier programs. But then within six months of getting that opportunity to interview with all these top programs, I was actually dismissed from my doctorate program.

And to make it worse, it was like on my 10th year anniversary, out of all days. So, I won't ever forget that. And it was with helping the medical team with the patient that was African American, who was male, and he came in with seizure activity. And because I knew his [indecipherable,] I worked with this patient prior, I knew how to help him, and I knew how to solve that problem.

So, when my preceptor went to the actual academic Deans and to our coordinators and let them know that she was actually gonna fail me on my rotation, it took everything within me to not just go crazy. Because I knew that I wasn't a failure and I knew what I contributed.

But I went into a very dark space after that rejection and after that failure and thank God, you know, for my wife, for my family, I was able to come out of it, I was able to look back and this is the result of that.

Me looking back, probably about four or five months after that rejection, I received an invite from the University of California, San Francisco, to interview for their chief pharmacy officer position.

Now, you need a pharmacy degree to even be considered for this position, but because of what I accomplished in undergrad and graduate and pharmacy school, it made me a top candidate, you know, for this opportunity.

And then when I looked at the schools, the universities that reached out to me at that very end, I realized that the top three pharmacy schools in the nation, I had relationships with because of what I did in school.

So, I was able to look back and say, you know what, God, I never failed. You never failed. That's all I wanted. I just want to know I was good enough.

I don't necessarily have to get the opportunity; I just want to know I was good enough.

Next slide.

So, as I said, this was becoming now all inspirational to be able to share with other students about how to pivot, how to come back from when you have to pivot.

So, Voice Rally wrote a story about me in this article I explained about BrainSTEMology, how it got started. Really it got started when I was in pharmacy school.

Next slide.

And the concept was let me bring something to the table to help address a problem. We don't have enough diversity in STEM, especially within the Health Sciences.

So, my idea of BrainSTEMology evolved, it became more than just Health Sciences. It became clinical research, it became biotech, it became biopharma. And because of the experiences that I had, I felt that I was in a space where I could actually bring everyone together.

So, as Jenny said, it was based off the BrainSTEM. It was me actually using it as an acronym to say this is gonna be how we're gonna address this problem. I wanna bring artists. I wanna bring the students and then I wanna bring STEM experts all in together to create music. And now we bring in diversity. Now we create it on the spot and it's gonna be interesting. It's gonna be fun. It's gonna be something that's different, that has never been done before, especially as what I wish I had when I was in high school.

So, next slide.

So, as I said, the mission was to help to address a real problem within academia, and that's the lack of diversity that we see in STEM and that's across the board.

But I knew it really goes to having students able to communicate and to articulate STEM content to their peers without the fear. And if we can address that early on, then more likely they'll think about going into STEM careers.

Next slide.

So, in developing a curriculum, I thought about, you know, this has to be organic. You know you can't be, can't feel forced. It can't feel like it's just traditional. This has to be out of the box. And by bringing students, artists, STEM experts and together to make a difference. Now we can actually bring a curriculum that challenged them to learn information, to be able to interpret the information and then express it.

And hip hop is that that thing is a universal language, just like STEM, hip hop's global, just like STEM. So, on those aspects, this is what makes the curriculum of BrainSTEMology different than others.

And so last, but not least, we end up bringing BrainSTEM through manifest. So, we created the first Juneteenth celebration.

My wife did brought several organizations within our area to give back to our community and we did it through Juneteenth and we wanted to do it through STEM and through music and through art.

So, we called it Manifest, and so my idea was to have a cipher, to bring a cipher of professors showing what's the idea behind BrainSTEMology.

So, next slide.

Alright, we're gonna play this piece. This would be the capstone project that students would actually complete in our program of BrainSTEM. Let's play it. So, you get an idea.

There you go. It should be coming. It'll just take a little minute.

JOHNSON: You guys feel free to drop any questions you have in the chat for Mr. Flowers here about BrainSTEMology of course, I'll have my own questions, but we'll try to hold them until the end, while Jerry tries to get this video going.

But you got an interesting journey so far. I'm really sorry, I know I I came to you beforehand when we talked about how your whole, your whole post, doctorate, sorry not post doctorate, but your whole doctorate experience and how that ended was so untimely and so unfortunate and so unjust.

And I'm sure there's several people out there who will be able to probably feel that.

And I'm sure they're having [indecipherable] whole thing to show that type of relationship as well that you can still be successful even after the failures.

I think that's really important to, uh, what's the word for important message?

FLOWERS: To have resilience. Resilience.

JOHNSON: Perseverance. You know to always keep going. Keep striving. I think it's definitely important, especially as a college student. You know, we face a lot of our own struggles and some of us come from, you know, in college everybody's coming from such different backgrounds.

FLOWERS: Yeah.

JOHNSON: It really seems like he might have an issue playing, so if you don't mind, we'll probably will have to go past it.

HEWITT: Yeah. I just wanted to say that, Jerry, that it the video should be on YouTube if...

FLOWERS: Yeah, it's on YouTube. If you can't see it from there.

HEWITT: Just type in the same title and you can find it on YouTube.

JOHNSON: I would say yeah. And while you type that in, we can honestly just keep talking.

Like I said, perseverance. You know, it's something that you have to definitely keep in mind as a college student.

You're gonna get some of your hardest classes, especially on your, you know, your third year, 4th year, and things like that.

And going through your masters, going through your doctorate, it's like we believe we have to go through all these stages to get to these jobs or careers and then we'll be successful. The path isn't always, you know, it's not always like this.

It might curve, it goes everywhere and you are a good example of how that path might curve and still end up here.

FLOWERS: And then that that goes back to Carter G. Woodson. So, he's the only individual who parents were enslaved that went on to earn a doctorate degree.

So, you can't use, as a student, it feels so easy to use, what are your barriers to say... well, I can't do it or I shouldn't do it. But instead, he pressed for it and he did it.

So, it with BrainSTEMology I had to remind myself I didn't go into a doctorate program just because I want to earn a doctorate. I can create a doctorate BrainSTEMology is my doctorate.

One day somebody gonna realize that wow, the student decided that hip hop and STEM are equivalent. That if we utilize these different pedagogies as ways to increase student engagement, we can create a whole new science, a whole different science, a whole new study that you should be able to go to school and get your doctorate BrainSTEMology. You should be able to get your bachelors in BrainSTEMology.

We always talk about we won't real around the students. This is a real rounded student. So, you're not just good in science, you're just not good in math. You're good in drawing. You're you're good in making beats.

It's so many things that you can do and that's what BrainSTEMology is about and why you said, just having a resilience to go through your failures, but look at your failures in the different way, different perspective.

JOHNSON: And so, it's BrainSTEMology, I don't know if you already gone through it. So it's brilliant, brilliant rhymes, I'm sorry, brilliant rhymes, academic in nature, applied and then obviously STEM. Obviously, right?

FLOWERS: By incorporating apply science, technology, engineering, mathematics, and content.

Yep, you got it bro.

JOHNSON: So, I'm trying to see how that all works in a curriculum sense, like it's great, I see the idea. How do you do all this physically?

FLOWERS: Sure.

JOHNSON: How do you bring it all together and mix their ideas, mix their creativity and get their juices flowing to from learning, education and diversity as well?

FLOWERS: Sure.

Unfortunately, we've been able to see it in the cipher, but what I did last year is had a course with students at NC State University. These were high school students and during COVID I presented what was called Hip-Hop Pharmacology.

That's a play on we know when we look at different album covers. When we look at different content within hip hop, they discuss a lot of different drugs, regardless if they're illicit drugs or prescribed drugs. They're talking about them.

So, when I had the students do is actually, let's go to your favorite artist. Let's look at some of the drugs that they might have mentioned in that song. And let's look at the content, the lyrical content, did they describe how this drug worked?

Let's talk about nomenclature. Now let's talk about mechanism of action. Now let's talk about street names. Let's connect in now to something that you are already interested in, that you have a relationship with.

And then let's break down the verses. Did they really educate you on what this drug did, or was they just rhyming words because sometimes they do that too. They're not really giving you the information, but for example in KOD, Jay Cole talked about pharmacokinetics, pharmacodynamics and his bars like he talks about it in such a varying, by being a wordsmith, he's showing you his ability to understand that these very challenging concepts, but in the classroom they can be very challenging. But if it's applied to music and you can actually see what they're trying to convey to you through metaphors. Now you might be a little bit more interested in doing it.

So, I gave the students the opportunity to hear this presentation to now work with your student, work with your team. You created your own name. You know you created your own squad.

Y'all got together and y'all wrote bars based off of how Covid worked. How the vaccine worked and even share about your mental health? Maybe some things that

you went through that's personal, you know, to your family, how it affected you through that school year and then at the end we did a cipher.

So, we had hip hop artists to work with you with your bars, because we're not doing cat, sat, hat, rat, bars.

We talk about real lyricism in this program, but altogether as you said, this is giving the information to the students. This is allowing the students to analyze, to articulate, to synthesize the information and share within a safe space with their peers.

So, you can say either I can do this by myself, or I can do it as a group and I'm telling them let's work as a group because in STEM, it's all about collaboration. Nobody's on the island by themselves.

It's great to have personal achievement goals that you make, but it's so much better when you actually doing it for someone else's bigger than yourself.

And like I said, that relates back to Carter G. Woodson. What he did as far as helping to educate us about minorities who were making advancements within technology and engineering and making patents back in the late 1800s, it wasn't just for African Americans. It was for Caucasians. It was for everyone.

So, it really elevated everyone's understanding about their ability to give back to society, and that's what really BrainSTEMology is meant to do.

AGUILERA: I wanna say that I think it's so, because I've went through your website, as I said, and I read through your mission of historic preservation, education, enrichment and community engagement.

And to have seen the classes that you've done and how you're encouraging young students, you know, high school students, when they're in such a vulnerable state, you know, they're being pushed into, you know, college or working. And it's one or the other, you know, there's no break to figure out who you are.

If you wanna go to college. If you wanna, you know, entrepreneur and do your own thing.

So, just start engaging them already is to set them up for success and to give them the opportunity to see you and your success, and how there's not just one route.

As Damien had said, it's not linear and younger students, especially after the pandemic, were lost for a really long time. They didn't know if they wanted to go back to school.

And so to see how they then turn into in their careers when they're older? I'm super excited to see the new artists that that are gonna come out and the [indecipherable] that's gonna come with them if they do pursue a traditional route through college and degree.

But that isn't the only way to get into, you know, your passion in STEM. You know you can learn biology, physics, chemistry. You can learn that online.

You might not have a degree, but you can definitely still learn as much as you're willing to. And I think that's just so great, especially when kids are in such a, I don't wanna say, they're like a sponge and they're malleable. I think that's the word.

And so, there, it's, I just think it's so cool.

I'm an educator, so I honestly the coolest things. Uh, but I really like watching men reading through your website and just how it developed and how it's very true to the mission. And you are very community focused.

And for me working in the nonprofit, I love finding new organizations that bring the classroom and make it accessible because higher education is so inaccessible.

And you know, as college students and we, we know that. The classroom isn't always safe for people who aren't the default.

FLOWERS: Very True.

AGUILERA: So I really, I really like your mission.

FLOWERS: Thank you so much.

Inspire, yeah.

FLOWERS: Awesome.

HEWITT: Okay, so sorry to cut you off, but we're gonna go to a short break to play a short video about Iconic Bond.

So, hopefully this one will load now.

And as soon as this is finished, we have loads more questions to ask.

And so, we can see it Jerry, but we can't hear the volume.

GREENE: I was about to say, do you guys, can you guys hear it?

FLOWERS: Yeah, no... just need the volume.

GREENE: It's usually the hardest part, honestly, getting the sounds like show up through it.

HEWITT: Yeah, it's a bit of a weird process with this...

FLOWERS: The fun thing about Iconic Bond is actually he's a chemist. So, he didn't make that name up.

GREENE: That makes sense.



HEWITT: Yeah, I wanted to actually wanted to ask you, professor Flowers.

So, hip hop or music on a whole is something that, like you said, the youth can express themselves through. And I'm from Jamaica and, you know, music is big down there.

FLOWERS: Awesome.

HEWITT: So, you have people my age that will little drop out of school. They'll just go start making music in the studio or they're on the street making music.

My question is, how has BrainSTEMology taken the youth off of the street and kind of put them on the right path?

FLOWERS: Sure.

HEWITT: Keep them out of danger and you know ensure that they have a better future.

FLOWERS: Sure.

So, as I said, when we did the online version of a cipher with students at NC State, many of them were high school students and one of the students actually reached out to me that I was able to meet later on.

And I've been in contact with him since that day. Now that's over a year that he will reach out to me and say, you know, how you doing? You know, how's class going? How BrainSTEMology going?

So, I believe that's the way that you can build organic relationships with people outside of the music, like you said within your community. It's all about music and music brings us together. And once you actually learn that you have a lot of things in common with one another, either the artists or styles of music, it brings up that relationship that you now want to learn a little bit more about that individual outside just music.

Now you can have the deep conversations to help them if they are going through things. So, that's why I do it, my student that we mentor with, I just check in every now and then.

You know, bro how's class is going? You know, is there anything I can do, I can help you with on your attorney outside of just music? But, and he don't even like hip hop music. But he loved the fact that we were bringing, you know, something different to draw his interest within the classroom setting.

HEWITT: Yeah. Excellent.

JOHNSON: I and I guess you know, as Taj, you asked, like how is it, you know, taking kids off the street and putting them in the academic setting? And, you know, I almost want to jump out there and be like, you know, I could probably answer that.

You know, don't if I was just talking about some of the... I guess just how he would do this physically and how he's he was connecting it right?

And, you know, Kendrick song and things like that and the stuff that he rapped about.

It's by adding that, I got that personal connection for the students that he kind of end up relating to, they can end up getting a grasp point. Something that they're already familiar with, and that's a common like teaching technique that they do in a lot of things.

It's like by making yourself more familiar with that topic, you're able to learn it better. And just listening to it, it made me honestly interested. Honestly, I wanted to learn it myself.

I was like ohh I could easily see, you know, how you bring all this stuff into one and these people are even grasp it much easier.

Because it's something that I already kind of have some sense of relationship to or some sense of know about on.

You know why I can, I could easily see, I'm really excited to see how that works, especially in the future.

You know, I think there's a lot of distractions, especially electronically [indecipherable] and stuff like that. And with the culture that you're kind of bringing into BrainSTEMology with the kids that you're bringing into it, you know, that youth and stuff, it's they're growing up with all these either distractions or experiences or relationships that are similar.

And by having you there to kind of guide them through those and show them what to focus on and what to grab from all of the nonsense that might be spewed in music these days. Because, you know, the negative, I don't know how to how to really word it. But all the negative emotions and things like...

FLOWERS: Stereotypes.

[several talking simultaneously]

JOHNSON: I think I think all of that. It's just really, it's really cool to see that done. And so that's why what you're doing is such a important thing.

FLOWERS: Did you guys watch the 50 year anniversary, the Grammys. Did y'all see the hip-hop portion of the Grammys and how it got so many people excited?

If you really go back and look at hip hop's history, they were engineers, they were scientists. They call it the elements for reason.

They were taking concepts from the periodic table when they talked about hip-hop elements.

When you going into the cipher it looks like going on [indecipherable] when you're in the hospital.

We get in a circle, people, you know, form a circle and discuss their patient and what they're doing as a team.

These same type of concepts are within hip hop culture, so it's just not about the music. Even if you don't like a certain style of music, it's the concepts behind it that shows that the, that these individuals were young and they were thinking inside the box, outside the box. However, you want to describe it, but it shows how relatable it is regardless of one's race, gender, ethnicity, sexual orientation.

We all can communicate, and once I show students that if you love hip hop, you love STEM and if you love STEM actually love hip hop. Because many people are very smart, book smart, but you get them in front of actually trying to explain what they know in that book to their peers. A lot of people get scared, get nervous, get choked up.

And hip hop, especially getting the cipher, teaches you about public speaking. It helps you, you know, overcome that fear of engaging with the community and engaging with your peers.

So, these things are really just foundational things that we can do to help students to identify with the culture and see themselves from groups of race.

HEWITT: Yeah. Excellent. I 100% agree. I mean, it's just how do you implement, you know this program now.

But we do have some questions in chat and we wanna get through those. So, Jerry, if you could put them on screen.

So, we have one from Mr. Rasheed Graham. Did at anytime through your journey, did you face imposter syndrome?

FLOWERS: Wow.

HEWITT: Exactly. Yeah.

If so, how did you circumvent it?

FLOWERS: Rasheed? Definitely.

I wanna say, you know, at the very end of that doctorate program, I actually I am writing a song called Imposter Syndrome? Where that's what I'm talking about, that you go through academia, you achieve so much, but then when you start comparing yourself to your colleague, you can start actually making yourself not seem as smart or as, you know, educated as someone else.

And it and life really should not be about comparing yourself to anyone else. You should be comparing yourself to yourself. You're the standard. Did you do better than you did last time?

That's the motive. It's about internal validation versus external validations.

So, yes, when I had the opportunity, when I had that very difficult conversation with that preceptor, at that moment, I was challenging myself to say, you know what, I hear you. I'm not gonna disrespect you.

You're my elder Foy. You do have a white coat on. You know, you do have some some letters behind your name.

But at the same time, I know what I did. I know what I've accomplished, and you might not know what I accomplished, and it's not really for me to tell you about what I did. It's for you to have that conversation with me and you will find out.

So, in doing so I can't be arrogant. I can't be arrogant about who I am and what I accomplish. I just have to realize that I'm challenging myself to do better and I can I take this moment and actually pivot and make something better out of it.

It's lemons right now, but can I make lemonade? And that was opportunity where I was put in a position to just make lemonade for sure.

HEWITT: You know Martin Luther King, Jr. did say, you know, keep moving forward. Even if you have to walk or run or fly, [indecipherable] one step at a time. Keep moving forward.

So, I think you answered that question brilliantly. And uh, this entire show has been great. I mean your genius in created this program is just, yeah. Thank you.

I should we should be the one thanking you, and I hope to see, I hope to see your program in the headlines in a couple months, or maybe in a couple of years down the line.

FLOWERS: Well, we do have a, you know, a call to action for you guys. We want you to be a part of what we're doing.

So, for a manifest that's coming up for 2020 to 2023, I'm going to be looking for college students to be interested in in our STEM crawl.

So, what we're doing is actually trying to educate the key is about different careers. They can go into STEM outside of just science, but technology, engineering and mathematics in a different way.

But I need college students like yourselves to have this discussion with them. Sharing your pathway, how did you get to it? Some of the transitions you have to make on your journey, it's so important too. Besides just myself.

HEWITT: Yeah, definitely.

I think they're, I think in the STEM community, often times there is a misconception that there is a separation between creativity and STEM subjects.

You know, people think that engineering is always just calculated, but you know there is so much creativity in engineering, every STEM subject.

FLOWERS: Sure.

HEWITT: That's the beauty of what you're bringing together in this program. You, you know, really combining creativity with STEM.

GREENE: Oh and it looks like we actually have a bit of the STEM crawl...

FLOWERS: So, this is a promo, and just some of the students, some of the business owners who are part of STEM crawl on that day.

Some of the artists, we did everything from learning how to write poetry, learning how to make beats, learning how to just communicate with business owners.

If you wanna be a boss and be entrepreneur, different levels of STEM students got a chance to learn. But we made it as a party, you know, it's a networking opportunity workshop. So, it's one of a kind.

So, we definitely want students to partake in some of the things you're doing. You can see below this is probably a video showing the Genius Party. They actually did a session, teaching the kids how to make beats.

So, that's engineering, you know, that's audio engineers right there. There's so many different levels you can do within STEM.

JOHNSON: This on'es crazy. This is all really cool stuff. Wow.

FLOWERS: Appreciate it, Damien.

JOHNSON: Of course, no, like appreciate what you're doing for us.

HEWITT: I don't know if you, whenever you have some time, Professor Flowers, I actually have a request for you if you want to check out Nujabes?

FLOWERS: Okay.

HEWITT: Yeah, he's a, like I said, he was a Japanese DJ, a hip-hop artist. He passed away, but he's very influential in the hip-hop scene.

JOHNSON: I'm trying to see if we might have any more questions inside the chat.

But if not, I'm sure I don't wanna get like obviously too personal. But so as you were kind of going up your uphill climb, you, I realized you found yourself a lot of opportunities opened a lot of doors. And I'm sure these doors then it just opened up for you, you know, for no reason or just because they could.

I want to know how you ended up putting yourself in such advantageous positions despite being from the background that you were from?

FLOWERS: Being authentic. Being genuine, you know people know when you're really genuine and when you have a purpose, they wanna get behind you.

So, I had my chemistry professor and said I when I first took his test I failed his test. I probably had the worst F in his test. But the second time I said I am not going to get an F again, that's not gonna happen. And I took the test, I got the highest A in his class.

He wanted to make sure, of course, I didn't cheat. So, the third time he have me sit in front and it was after that test and he saw that scored another A, he said 'what are you doing this summer?' And I said I don't know.

And he introduced me to some research and thankfully, like I said, my wife helped me get over that imposter syndrome. Help me get over the self-doubt and to go ahead and apply and it was really off that relationship that he had with faculty at Northwestern that opened that door.

And once I went to Northwestern, which I knew was one of the best universities in Illinois and I was able to do just as well as the students who came from the big, bigger name schools, that's when my GPA took off.

Once I went back to school, we didn't have a chemical engineering program at Saint Xavier University. When I went back, physics wasn't hard anymore.

You know, organic chemistry wasn't challenging anymore because now I went into it with a with the mindset that if I can learn chemical engineering within 8 weeks and present it to graduate students and doctoral students, then there shouldn't be anything I shouldn't be able to accomplish, if I put my mind and heart into it.

So, it's really about building those relationships. It open those doors. Networking, getting mentors, getting mentors, getting mentors.

That's how the doors opened up for me, for sure.

JOHNSON: Wow. Well, thank you so, so, so, so, so much, Mr. Flowers.

We'll probably go ahead and start doing some closing statements, but we do hope that you can come back to, you know, the Northern Wake campus sometime in the future.

FLOWERS: Awesome.

JOHNSON: In terms closing statements and you kind of set a lot and I kind of want tell you why something that I think that I've taken away from at least our talk here tonight and some of the other times I have met you.

But for one perseverance, perseverance, perseverance just keeps striving just keep going. like Taj said. And like Martin Luther King said just a step every day and you're gonna get there.

Another thing I think that you've kind of showed me is that in order for an, and I kinda wanna talk more so the people of color in this sense, in order for people of color or the minority to end up being and such and such successful spots like we are, we really have to follow our passions and our dreams and our ambitions.

You know 200%, you don't think of any plan B's or any or anything else. It's plan A or there's no plan at all. And you gotta really put all you can into plan A, and I think that's definitely what she did.

So, I wanna thank you so much for being here tonight. I'll let anybody else and there closing statements of course, but thank you so much, Mr. Flowers.

HEWITT: Yep. And, you know, as Damien was saying, was a very good to have you on here.

I'm sure the audience watching at home took a lot in from what you were saying, and we hope they can come on campus again someday.

And yeah, I'll let Jenny see what she has to say as well.

AGUILERA: Thank you so much for sharing more about this program. I think programs like these are really an essential to building up future generations and to giving them chances to blend all of their interests and not staying in, you know, these ABCD type of jobs.

You know, there's so much more out there and I definitely believe that your program shows that you don't have to sacrifice your creativity or, you know, the humanities for STEM or STEM, for humanities.

It's all intertwined, and you just really have to find the knack for it, and I'd be super excited, you know, to see more of your work and to see more of your events.

And I'm super excited for all of the kids you get to help build into, you know, successful, happy adults. You know, the happier the adults are, the better our society is.

So, I'm super excited for these programs and I hope more of these like keep happening and be creative because there's so there's so much you can do with this.

And they can touch students all over the country, especially now we're so separated from each other.

And you know, community is the biggest part, but keep this going. So, I'm super thankful for programs like yours and it was very talking to you today.

FLOWERS: You too. Thank you, guys, for everything.

JOHNSON: No, of course, of course. Thank you for being here.

Also, wanna thank DEI for sponsoring or partnering with us today as well as all the other times we have hosted the show.

So, thank you everybody for being here.

Thank the audience, of course as well for being here coming out today.

We should have a lot of Dr. Flowers or Dr. Scholars, you know, links in the chat if you guys would like to reach him, click on one of those links. Go read up about him.

You've already seen some of the stuff that's interested in today. But click on the links, you should be able to find some contact if you wanna talk to him.

So, Mr. Flowers, do you have any, you know, closing statements you wanna say before you wave the audience goodbye?

FLOWERS: Sure.

My last statement is a call to action. We need the youth. We need you all to step up and help the next generation. That's how we pay it forward and I hope you guys will join me at BrainSTEMology to make that happen.

HEWITT: Yep, definitely.

JOHNSON: Alright, well that sounds good.

Well, I thank you all so much for being here, you guys, hope you have a good night and thank you Taj.