Connecting Black women in computational biology

Jenea Adams, a second year PhD student, found it hard to connect with other Black women in her field of study. She then decided to create the Black Women in Computational Biology Network, which has attracted the support of many researchers. We spoke to her about the Network, as well as gender and racial inequality.

■ What inspired you to pursue a career in computational biology?

I got my bachelor's from the University of Dayton in biology, and I had a minor in computer science. After realizing that medical school was not for me, I was quite interested in blending my curiosity for mathematics and programming with my long-term excitement for biology. Initially, I did not know anyone in the field of computational biology, but I had mentors and advisors who pushed me in the direction of relevant resources, since the University of Dayton didn't have a computational biology curriculum. By the

time I completed a bioinformatics Research Experiences for Undergraduates (REU) program at the University of Pittsburgh, I realized that I wanted to pursue a PhD in this field, not only because it was an exciting field research-wise, but also due to the diversity in terms of people's backgrounds. Eventually, this led me to the University of Pennsylvania, where I have been working with computational genomics; more specifically, my focus has been on understanding RNA processing for the purposes of improving cancer immunotherapies through computational method development.

■ Did you have any role models in your field of study?

My main role model was Ivet Bahar from the University of Pittsburgh, who was my advisor during my REU program. I saw a really powerful woman leading an important department at the university and in computational science, and she inspired me to reach for more and think outside of my comfort zone. At the time, I didn't know many women in the field, and I certainly didn't know any women who looked like me in the field, so she was definitely inspiring to me.
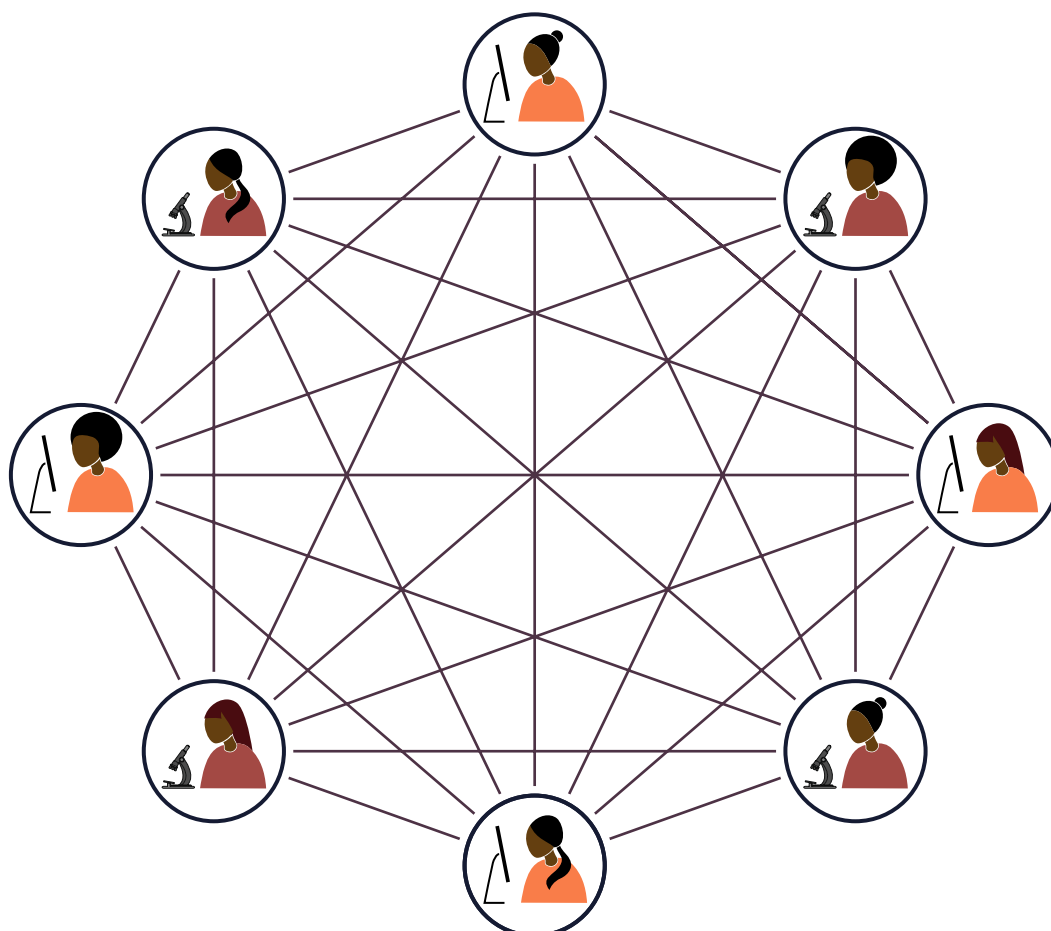
■ **Regarding your last point, how difficult was it for you to connect to other Black women in your field before you created the Black Women in Computational Biology Network?**

My network of Black women in the field before the Network was composed of one person from my REU program at the University of Pittsburgh, and two other people whom I met on graduate school interviews. I would have loved to be able to reach out to more Black women to learn more about them and what they do, and to receive advice. Even though I had this personal motivation to pursue my career in computational biology, it would have been great to find someone like me to be more reassured that I could actually step in and succeed in the field.

■ **Would you say that the lack of other women or Black women in the field made you feel that it could be hard to succeed?**

Yes. I am a first-generation college student, so I didn't have much guidance or anyone else to compare my experience to in general. Therefore, I did wonder at times if I was even capable of doing this. As a Black woman, I don't necessarily immediately separate Blackness and womanhood: for me, it comes as a complete package. It used to be hard to interpret the lack of people that look like me: is it because I am a woman, or is it because I am Black? I also struggled with the uncertainty of feeling supported, and feeling seen. As an undergraduate, I used to wonder: am I going to have a principal investigator that has never mentored a Black person? After a summer like the one we had in 2020, when there are protests around my city following the murder of another Black person, am I going to have to login to the lab meeting and be fine without someone asking or acknowledging what is happening around us? Am I going to feel like I belong?

■ **How did you come up with the idea of creating the Black Women in Computational Biology Network? Were you inspired by similar networks elsewhere?**

It was honestly a natural process. I decided to search for 'number of Black women with degrees in computational biology' on the Internet and found nothing. There was an editorial on women in the field, but nothing relevant to race or ethnicity demographics of the field. I didn't put that much thought into it, but I knew that someone like me was going to really appreciate being able to find other Black women by doing a simple search. Mostly, I just wanted to have a central resource for Black women to use, and I decided to start with Google Sheets. Then, I tweeted it out on 31 January 2020 and it

got a lot of attention and support. Eventually, I decided to work on our first edition of the website. Now, we have a new website that is so much more and symbolizes our growth into a full organization. The next person that searches for Black women in computational biology will be able to find us.

■ **Is there a framework for mentorship within the Network to help younger scientists?**

Yes, absolutely! We actually just had our first mentoring mixers. We have members from different regions, such as Europe, Africa, and North and South America, and we had our mixers by region. This was really helpful for people to feel connected to someone that they might have more in common with or understand cultural aspects. We focused on peer mentorship, finding accountability partners, and practicing how to start these conversations one-on-one with someone. Next semester, we are going to implement different activities in the mentoring circles,

which will comprise members at different career stages with similar research interests. It's really great that we have a good handful of faculty and senior scientists, as well as graduate and undergraduate students, and we are trying to use that to our advantage and to start building relationships within the Network.

■ **Are there opportunities to share resources and initiatives across other networks created in similar or different domains?**

Yes, we have a strong relationship with them. For example, BlackInData was co-founded by a member of our Network, Simone Webb. As networks, we are all quite well connected, with many of us being members across multiple networks, and this will be really important for us moving forward. I see, in the near future, a gigantic BlackInX conference coming, where we can all meet and share ideas. There are so many different groups with varied interests but at the end

of the day we can come together for a larger celebration, and I believe this is a testament of global Black culture.

What has the creation of this Network taught you?

The Network has definitely given me a new perspective on my personal leadership style. I think that the Network inspires a lot of other people because I am passionate about transforming community-building. A lot of work gets done because we are all excited about the space we are contributing to, and that's the type of community that I want to be in. I don't see myself at the top of the Network, but definitely among it, and that's the type of leader I want to be. It's all connected. I have seen that what matters is a collective action as everyone is contributing to it.

What have been the biggest challenges that you have encountered?

A challenge we have faced has been to figure out who we are as a group, and how to communicate this to others. Another challenge is related to overcoming resistance. There have been questions on why just Black women, or why we are targeting this particular group. Another question that has come up is 'do you really think all these BlackInX groups will last?' I say yes. We aren't going anywhere.

What are your plans for the Network for the next couple of years?

Once we have an executive board, I would like to focus on communication and engagement with the community, as well as education. A lot of us are interested in collaborating with local schools, or organizations such as Black Girls Code. For example, I am interested in figuring out how we can get kids in high school excited about and comfortable with what it means to be at the intersection of two seemingly different fields, and how they can build and grow competence and skill sets unique to each of them. I would also like for us to eventually have a conference. Finally, a big next step for the Network would be to evolve it into a non-profit organization.

In your opinion, what role do journal editors play in fighting anti-Black racism and gender discrimination?

I think journal editors have a unique opportunity to provide a platform to discourse about reimagining how we support persons excluded from science because of ethnicity and race (PEERs) while the effects of systemic racism continue the permeate the spaces where we contribute to the advancement of science. This includes closely examining existing and forthcoming diversity, equity and inclusion initiatives. I think inclusivity work is about empowering people to raise their voices: diversity does not mean much unless we are heard and taken seriously. There must be a way that we can communicate and really inspire the next generation of computational scientists, to feel like they are in an environment that cares about them, while making sure this is actually true. Overall, journals can continue to be a place of a more casual conversation and discourse about societal issues that affect our scientists on a broader scale, and also continue to invite and bring those scientists on board.

Many scientists recently called out racism that they face in academia under the hashtags #BlackInTheIvory and #ShutDownSTEM. Do you think these movements have resulted in any meaningful changes?

I think that this is a question for people who may not think of their own existence in STEM as resistance to inequities. For instance, did they feel like all of those reading lists that were shared in response to the summer 2020 events were helpful? If we are confronted with another discourse around this topic, what will they have learned from the last time? I know for a fact that a new wave of diversity, equity and inclusion committees is happening across the country. My message for people in these committees is to look internally and figure out if they are ready to do this type of work. Are they mentally ready not only to confront their own biases, but also to stand up to what is not right in their immediate environment? Are they doing this in a way that puts the entire burden on PEERs? It is important for people to think about the purpose and the process before jumping into dismantling structural systems in their own academic environment. I hope that people are well equipped for these committees so that they can last beyond the youngest students: this has to stay with administrators and faculty who are going to be there for a long time. That is how our conversations using these hashtags transcend from more than just a hot Twitter moment, but rather to a real movement.

We encourage our readers to find out more about the Network by following their website and their Twitter account.

Interviewed by Fernando Chirigati and Ananya Rastogi