Statement of Diversity, Equity and Inclusion

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> *This is a long version of my statement of contribution to diversity, equity and inclusion. I fully intend to pursue all of the ideas presented below, regardless of where I find academic employment.*

Everyone deserves an equal chance to show their potential. Often, it takes the right time, place, person or simply an opportunity to inspire someone to set out on a path that will lead them to success. It took several tries for me. Two years of working dead-end jobs as a high school dropout was enough to encourage me to pursue an education at New Mexico State University. But even there I struggled, failing to meet a 2.0 GPA by the end of my fourth semester. With the help of several professors at NMSU and continued support from my family, I found a passion for genetics during my third year and everything changed.

I am one of the privileged ones. Without that support system, I may not have made it far enough to find that spark. So I ask myself, how can I provide adequate support and opportunity to help create that spark in those far less privileged than I? As an educator, I can work to create opportunities for students from underrepresented groups, including women, to pursue further education and expose students to different cultural perspectives in and outside of the classroom. I can take active measures to include students as part of a healthy lab culture, where expectations are clear and everyone is given equal opportunity to succeed in their own pursuits. Importantly, I can continue my own education into diversity, equity and inclusion (DEI) so that I can adapt my own efforts to better serve the community.

The Diversity Preview Weekend

To engage with the community and apply my skills to help the DEI effort, I joined the Diversity Preview Weekend (DPW) initiative at Cornell University as a co-leader in September 2019, currently serving as the fundraising chair. DPW aims to increase DEI in STEM graduate programs at Cornell and around the United States by inviting applicants from underrepresented groups to attend a fully-funded weekend at Cornell. The primary goal of DPW is to empower participants through workshops, campus tours, and familiarization with the application process.

To increase financial security and reduce the financial burden on the participating departments of DPW, I have been working with several co-leaders to obtain outside funding sources. I put together an infographic (link) to describe how participants self-identify and what the matriculation rates are. This infographic was used to help solicit funding from Corteva, who agreed to sponsor two students to attend DPW in March 2020.

Now that a few years of data on participant outcomes has become available, I want to help demonstrate the efficacy of the DPW program and increase the exposure and outreach of DPW. I initiated and then partnered with several DPW co-leaders to submit an abstract for a talk at The Allied Genetics Conference (TAGC) in April 2020. The talk will be delivered by a graduate student in Entomology, Andrea Darby, to the DEI section of the Ethical, Legal, Social Issues theme at TAGC. Our hope is that this talk can target faculty, staff and students to encourage undergraduates at their own institutions to apply for DPW, or even create similar programs. We also hope to solidify current donors, as well as attract new donors by demonstrating that DPW like programs are effective and that there is interest in such programs in the academic community. I hope to continue support for these types of programs through advocacy as a faculty member.

The Hidden Curriculum

I recently attended a workshop on the Hidden Curriculum, led by Janani Hariharan (see Hariharan, 2019). The workshop included a role-playing, group construction project that had a profound effect on me, shedding light on how frustrating it is to be in the dark when others expect you to perform or meet standards unknown to you.

There is a disconnect for many students between what they think is expected of them, and what is actually expected. Some students who are more familiar with the US education system learn many untaught concepts that are not necessarily obvious or made accessible to those who are less familiar. Students from underrepresented backgrounds, international students, and *especially* visiting scientists, are given little guidance or resources outside of a desk to sit at. I believe there is almost a reinforcement of this process, where the unspoken attitude is "the best ones will figure it out". Such a sink or swim policy may identity a few good swimmers, but it also allows future Olympians to drown before they have ever been taught that they *can* swim.

To help uncover this curriculum, I would like build a requirement for new students and their special committee to produce written expectations and timelines with specific milestones. These milestones could include discrete items such as specific courses, conferences, publications, or exam dates, as well as soft skills such as oral communication, critical thinking, time management and leadership. Expectations for faculty should also be discussed and included in these agreements. This requirement would be a negotiation between the student and the committee that would be updated yearly or semi-yearly, signed by all parties and submitted to the section. This paper trail can then be used to address deficiencies on either side if a conflict arises.

As faculty, we must take the lead in providing a safe place to ask academic and non-academic questions and strive to make lab members feel comfortable at work. Faculty need training on what norms and expectations they take for granted. This will enable us to clarify and help students access available resources. I intend to include a monthly lab meeting designed to provide a safe place for lab members to learn about one another outside of their research projects, ask questions and discuss the abundant, but underutilized, resources that are available on campus. I would also work with my lab and other section members and faculty to identify and address hidden curriculum topics at this meeting. If this type of meeting proves useful, I will encourage everyone in the section to join in on the discussion, as well as urge other leaders to initiate similar discussions.

Learning DEI concepts in a safe environment

It is important that we recognize the need for education in DEI concepts and ideas. To enact societal change, individuals need to be willing to be taught and engage in the conversation. During this learning process many will make mistakes, including me. Mistakes are okay! As long as we learn from them and strive to better ourselves and our understanding of and compassion for others. It is paramount that we cultivate an environment where people can learn, practice and ask questions about DEI concepts without fear of retribution if they misstep.

It is also imperative that we, as educators, provide an inclusive environment and work to make resources equally available and expectations clear. We must reevaluate our own practices and implicit biases to ensure we have not unintentionally created an inequitable or exclusive situation. To address this need, I want to work to develop a series of DEI related requirements for SCS faculty, staff and graduate students.

For faculty and staff, numerous resources for DEI are already available through the Vice President for Diversity office on campus (e.g. CEIP and FIIE). Faculty should be *required* to attend these types of workshops on a regular basis, and a feedback system needs to be promoted to allow

for changes to existing workshops, and the creation of new ones based on observed needs. Regular evaluations of how each faculty member works to promote DEI within their own research groups need to be built, so that they can learn how to address their own biases and shortcomings as a leader of a diverse, inclusive and equitable team.

I would like to develop a diversity requirement for graduate students with the intent to increase exposure to new people, places and ideas. The requirement would be flexible and up to the student's committee to determine appropriateness. Ideas to meet the requirement could include a community-based project, volunteering to a DEI oriented program such as DPW, or a semester at another university or a CGIAR center.

To provide such opportunities, I would work to set up a graduate student exchange program between universities in different parts of the country, such as the South and Northeast. A semester in a contrasting environment would expose students to different demographics, cultures, traditions, ideas and farming practices in both directions. Modern jobs in academia and industry have rightly begun to put much more value on DEI, with many expecting direct evidence of a commitment to DEI from the applicant. This requirement would help provide personal experience with DEI ideas and initiatives that will aid students in pursuing jobs that value these important goals.

Lab culture

The most effective teams with the best ideas come from diverse backgrounds and experiences. Women, minorities, LGBTQIA and members of other underrepresented groups continue to face less opportunity and numerous obstacles, especially in STEM. Unfortunately, this has lead to a lack of perceived academic "merit" by some, when these differences are purely environmental in nature and driven by legacy and current social biases. I am committed to helping reverse these trends by building a diverse team and an environment in which everyone is valued and given the resources and opportunities they need to succeed.

A high quality work environment is necessary for high quality work. When undesirable aspects of the work environment cannot be changed (e.g. an office with no windows), high standards and equality in equipment matter even more. Small differences in resources can create an importance hierarchy, even when there is no direct intention to establish one. This includes ensuring that everyone has equally good chairs, desks and monitors. Providing second-hand equipment in poor condition to new lab members suggests they are less important, and is not acceptable.

Seemingly small differences can be be created inadvertently, and may result in great inequities. For example, holding lab meeting in a room without enough seats at the table. This sets up a stark contrast between those at the table and those seated away from it. New, international and women lab members may not feel welcome to sit at the table, and are therefore largely left out of the conversation. As faculty, we need to identify these situations and strive to find equitable solutions, such as encouraging all members to sit at the table and join in the conversation and finding a room with a table that can accommodate everyone.

Hierarchical mentoring has been shown to be highly influential on the progress of scientists as they advance through their degrees and postdoctoral work. Lab members with more experience transfer their knowledge and skills to those with less experience, but this does not mean that they are more or less important. As the lab leader, it is critical to foster this process, but also recognize that it cannot replace direct interaction with graduate students. Some students are very comfortable or may even prefer to operate independently, but this is a recipe for disaster if communication between the student and faculty mentor breaks down due to lack of frequency. Both parties are responsible to work to maintain this very important relationship, and should be double checked during yearly reevaluations of expectations.

Community outreach

I intend to help establish community outreach initiatives to identify, engage and recruit underrepresented high school students to the plant sciences. We should target low-income school districts, where young people may be unfamiliar with the career opportunities in agriculture. These careers can provide a way for aspiring young people to make real differences in the lives of themselves and others.

In an effort to reach out to local underrepresented communities, I aim to hire one or two students a year from the local high schools for work during the field season. I intend to seek out students who need additional resources to succeed in college, especially those from underrepresented backgrounds and potential first generation students. This work experience would provide these students with familiarity of a working research environment, and will benefit their application to, and success in college. This practical experience should also aid them in landing undergraduate research assistantships, if they choose to pursue them. Funding for such a program would be obtained through local or national granting agencies.

Curriculum

The curriculum needs to be reflective of the breadth of diversity, such that students recognize a bit of themselves, their culture or contributions that were made by people they can relate to. All cultures have their own traditions and customs for distributing seed, selection and cultivation. These practices are often assigned as unique gender roles, which often differ depending on culture. Gender roles in plant breeding and agriculture have largely been ignored in the curriculum until very recently. It is important that we expose students to these perspectives, which add rich texture to what is currently a rather monotonic Western viewpoint of seed systems. Recognition of self will further add value and engage students with diverse backgrounds.

To incorporate these ideas into the curriculum, I want to explore ways to teach about plant domestication, maintenance of genetic variation, and trait selection from different cultural and gender oriented perspectives. I want to identify and recruit guest class speakers who are familiar with seed systems outside the US and western European systems, many of whom may already be at Virginia Tech. Female and male speakers from American Indian, African and Asian cultures could be invited to discuss how their own seed and agricultural systems function. This will cultivate classroom discussion on how these seed systems differ from those in the US and what the benefits of these systems are. This will also challenge students to think critically about how we might adapt our systems to further food security and empower women in agriculture around the globe.

Conclusion

The opportunity to purse higher education should be accessible to all people regardless of race, culture, ethnicity, gender, sexuality, ability, disability, religion, nationality, socioeconomic status, beliefs or geographic origin. Educators have a duty to provide curriculum and instruction in an inclusive setting that is reflective of our diverse communities, where all perspectives contribute to a wealth of experience and knowledge. We have a responsibility to continue to learn how to adapt our practices and ideas to better serve the community and to prepare future educators to be leaders in promoting diversity, equity and inclusion throughout their careers.