

## **Diversity, Equity, Inclusion in Mathematics- Jesús A. De Loera.**

We mathematicians know a thing or two about axioms, and how to derive conclusions, lemmas, theorems from them. So let me start by saying I believe in the following four “axioms” stated by my friend Federico Ardila:

Axiom 1. Mathematical talent is distributed equally among different groups, irrespective of geographic, demographic, and economic boundaries.

Axiom 2. Everyone can have joyful, meaningful, and empowering mathematical experiences.

Axiom 3. Mathematics is a powerful, malleable tool that can be shaped and used differently by various communities to serve their needs.

Axiom 4. Every student deserves to be treated with dignity and respect.

If you believe these axioms, the consequences are clear for the way you should behave in the mathematical community. When you present your work, when you teach, when you design your courses, etc. having a set of axioms is useful to see where to put your advocacy and your energy for change. For example, data shows K-12 schools across the state do not receive the same resources for teaching. It is also evident that women and people of color are not proportionally represented in a our classrooms nor our faculty. Thus if you believe axiom 1, like I do, you are forced to conclude there is a serious problem of representation and loss of talent needs to be fixed. Axioms 2,3 inform teaching practices in that I am expected to show students mathematics is relevant in their lives, not just an abstract requirement they need to “pass”. Hopefully more students will actually enjoy their mathematics courses. Sadly enjoy is not the verb most people associate with our courses. Axiom 4 leads us to accountability to what we provide students, the time and opportunities we share with them. We have an obligation to all our students, to their families to create access to knowledge and skills.

From the four axioms above I consider it a mission, a duty, to teach and inspire young students to learn and appreciate mathematics. That is why I spend time with our undergraduates, encouraging them, listening to them, understanding what can be done better. That is why I strongly support outreach programs such as MURRPS or McNair, for those without sufficient opportunity and participation. I supported CALESS, the Chicano and Latino Engineers and Scientists Society of UC Davis, as tutor, and mentor for seven years. My large contributions to undergraduate research stem from the same desire to aid and mentor all students. At the graduate and postgraduate level, I do something similar. E.g., Among my fifteen former Ph.D students I have mentored six females and one black man. Two latinx students have worked with me, one is close to finishing. I am proud to have helped many students along my career. I hope I will help more. I particularly enjoy talking to the underserved, to those who know of personal struggle and overcame dark times.

Plenty of resources flow to the privileged already. Mathematics, like Music, is not for an elite, it is not some kind of private exclusive club, with a unique secret entry.

I embrace these axioms because they match my principles and identity. They resonate like the principles you learn as a child, like being polite and respectful to others, like learning to share your toys, like good manners at the table. Regardless whether others agree, I am determined to expand access to quality mathematical education within our public state university. We need to use all our human capital, stop wasting the minds of so many children. Mathematics is so huge, and there is so much need for it at all levels and domains of society that we all benefit from more mathematics lovers across society. Our K-12 teachers particularly need our help and solidarity to make this a success.