EDI (Equity, Diversity, and Inclusion) Statement

Mason A. Porter, 8/20/21

My strong belief in equity and outreach is an important part of my research, teaching, and other activities. I have a longstanding desire for a level playing field, and these ideals were strengthened by my graduate-school experiences at Cornell as a mentor in the Mathematical and Theoretical Biology Institute (MTBI), an REU for underrepresented groups that Carlos Castillo Chavez ran for many years, and my time as the Tutor in Applied Mathematics in Somerville College (whose original and pioneering purpose was to give educational opportunities to women) while I was at University of Oxford. Engaging with students who were overcoming barriers at both MTBI and Somerville was eye-opening, and I found it both inspiring and educational to hear accounts (including many firsthand ones) of the stories from generations of Somervillians (both colleagues and alumnae) about their lifelong challenges for gender equity in academia and other settings.

The COVID-19 pandemic and the George Floyd murder and subsequent protests for social and racial justice put equity issues even further in the spotlight in our academic community. Many of the students in our UCLA classes don't have access to a quiet place to work from home (or have other barriers), and it has been even more important than before to give accommodations because of these and other inequities. To try to help without prying into personal things, in my Spring 2020 course, I gave my students a blanket 1-week extension on all assignments. Unless they were going to be more than one week late (which I also accommodated when needed), they didn't have to ask for more time and could just take it.

It is crucial for all of us to show empathy, and using empathy to guide our policies, communications, and interactions will hopefully improve the hostile environment that many of our postdocs and students (and I) feel in our department. To do our best to ensure equity and inclusion, it is important for us to keep some of the changes from the pandemic, such as some office hours being online, as why should somebody have to drive an hour each way through Los Angeles traffic to go to office hours to ask a question for 10 minutes? Similarly, in the future, I hope that our in-person seminars can also be broadcast online so that our colleagues who choose can watch them at home and to increase participation from people at schools like the local Cal States, who don't have the same resources as we do to invite famous mathematicians to give colloquia.

Given my research interests, which include the application of mathematics to social systems, I am in an interesting position with the role that equity, diversity, and inclusion can play in my reseatch. There is an enormous gap between simply doing the mathematics of social systems (in its typical form, it still involves doing the usual academic things) and actually engaging with communities and policies that directly help people. To help fill this gap, and very importantly to give concrete examples for our PhD students of a path that is available to them to take should they choose to take it, I had the idea (when many of us were thinking carefully about what we could do to improve the academic world) for the Social-Justice Data-Science postdoc (see https://datatheory.ucla.edu/social_justice.html), which is a 3-year adjunct position like our department's other postdocs and is a joint venture between the Mathematics and Statistics departments. In 2020, I saw an advertisement at University of Virginia's mathematics department for a 1-year position on social justice for somebody with an undergraduate degree in mathematics, and I felt that a modified version of such a position (specifically, something longer-term and after the PhD) was a concrete thing that UCLA could implement to improve things. I contacted Deanna Needell (math) and Mark Handcock (stats), with whom I had been interacting very frequently for our new Data Theory major, and they were enthusiastic about the idea. The three of us designed this position, which is a three-year postdoc and involves joint mentorship from one person in mathematics/statistics and one social-justice scholar.

Thankfully, through discussions with the Mathematics and Statistics department chairs and Dean Miguel García-Garibay, we were able to obtain funding for one SJ-DS scholar. Hopefully, we will continue to hire a new SJ-DS postdoc every year. Our first such postdoc is Courtney Shelley, a quantitative epidemiologist who started in this post in July 2021. My understanding is that the SJ-DS postdoc is an innovative position, so this is also a valuable opportunity for UCLA to lead in a crucial area. From my point of view, a key benefit of having SJ-DS scholars goes far beyond their individual contributions. Our students will see and interact with the SJ-DS scholars, and they will thereby see that applying their mathematical and computational skills to social justice is a viable path for both PhD theses and their careers. Having people in our department who are already doing this will show our students a path that we haven't shown them directly before.

Because of my research interests, it is easier for me to bring equity issues directly into the classroom than it may be for other mathematical topics. Many of the students who do projects under my mentorship are interested in social-justice issues, so I have tried to increase my projects that get more explicitly into equity and social justice. For example, in Spring 2021, I taught a Math 285J course on mathematics and social systems. The main work in the course was a group project, and I stressed that the viable possibilities for such projects ranged all the way from proving things about mathematics that was inspired by social systems to directly engaging with using mathematics for activism. One project in my course concerned the use of topological data analysis to analyze coverage gaps in locations where people could go to vote. The students who designed the project compared the situations in New York City and Atlanta, which notoriously has had issues related to this. For the past year, I have been comentoring (jointly with my former PhD student Michelle Feng) an undergraduate student from our Data Theory major who is studying the bamboo ceiling. An example in which my research has engaged more directly with the needs of underrepresented groups (i.e., with the "stakeholders") was my collaboration with the Los Angeles Unified School District (LAUSD) to improve their busing services. I have also participated in other efforts at data-driven analysis of societal issues. In November 2016, some colleagues at other institutions and I formed a data-science collective called "Susan Bourbaki Anthony" to do projects in data science for the purpose of social justice. We have written a few blog entries and collaborated with the Southern Poverty Law Center. Some of our work, including network analysis of Twitter data (which used computational methods that I helped develop), appeared in articles in venues such as *The Atlantic* and *The Huffington Post*. We later published a version of this work as an academic paper, but there was initially the short-time-scale collaboration with SPLC.

Another issue that is closely related to my research interests is the equitable acquisition and use of human data. This is something that I discuss extensively in my courses (such as Math 285J, Math 42, and Math 168) and with my mentees. I have given lectures on data ethics and provided resources for further reading in my courses, UCLA's applied-mathematics colloquium, and the 2021 AMS Short Course on mathematics and computation in complex social systems that I co-organized. I am currently preparing a chapter about data ethics for the Short Course proceedings. My Short Course co-organizers and I are currently preparing an application in the hope of organizing a 2023 AMS Mathematics Research Community on complex social systems. We hope to include multiple projects that engage directly with activism and relevant stakeholders.

I'd also like to comment about my mentorship and its connection with equity, diversity, and inclusion. I have supervised a very large number of students relative to my career age. Many of these students and postdocs are women, who are underrepresented in mathematics. Our department only has about 10–15% ladder faculty and PhD students who are female or nonbinary. By contrast, 4 of my 5 current PhD students and 75% of my current research mentees are women or nonbinary. In my career, more than one third of my roughly 150 research student

mentees have been female or nonbinary, and 10 of the 24 students who have completed doctorates under my mentorship are female or nonbinary.

Many of my mentees face additional difficult challenges from being in underrepresented groups, and I discuss these issues openly with them. I also openly discussed such issues with them in relation to the pandemic and amidst the civil unrest after George Floyd's murder. After the latter, I offered my group members a safe place to stay in my home if they were protesting and needed one, but none of them took me up on the offer. Additionally, amidst the various VISA-related issues that were cropping up during the pandemic, I also made sure to talk to my international students to check up with them on how they were handling things. There didn't seem to be much global communication from the department and things were very tough for them, and I have much more control over the environment in my research group. I wanted to be there for my mentees. Once again, it is crucial to be empathetic. It is important not only to try to solve problems (of course), but also to offer empathy, especially to those for whom one is a mentor or colleague, to people who are being affected by these things because emotionally these things can be overwhelming.

I point my mentees to resources, networks, and opportunities (e.g., from the Association for Women in Mathematics) that can be useful for them and bring up mathematicians and scientists from various backgrounds in my courses and in our other discussions. I make sure that all of my students at all levels are aware of these issues and opportunities. The courses that our PhD students take often have only 1 or 2 women but multiple dozen men in them, so the environment in my research group differs markedly from the environment elsewhere in our department. Until recently, our 6th floor had a hallway with pictures in an outrageous exhibit called "Men of Mathematics" (with only Emmy Noether otherwise represented, if one could even find her picture), and that sends exactly the wrong message. We still need to replace the now-blank walls of those hallways with something explicitly positive, but at least the exhibit is gone. Now that physical spaces are starting to become more meaningful again, I hope that we can put positive and inclusive things on these spaces.

In addition to mentorship directly at my own universities, I have also been the lead and co-lead organizer of several conferences and other programs, where ensuring diversity of participants and invited speakers has played a major role. This includes being the lead organizer of the 2014 AMS Mathematics Research Community in Network Science, where more than 40% of the participants were women. A more recent example is my role as co-lead organizer of the 2019 SIAM Conference on Applications of Dynamical Systems. Through expanding icebreaker and mentoring sessions (and recruiting excellent people to lead them, including my then-postdoc Heather Zinn-Brooks as co-leader of the former), my co-organizer and I tried very hard to create an inclusive environment at the conference. As one junior researcher wrote to me after the conference, "you guys created a palpable shift toward a more inclusive, humble, welcoming SIAM DS community this year at Snowbird, and it's made me more comfortable being more completely myself in math settings."

For several years, I have been involved heavily in networks outreach, including for elementary-school and high-school students. I developed materials and conducted a "traveling road show" with my (and other) postdocs and students in England to introduce network science to students of ages 13–16 (often at schools whose students rarely apply for admission to University of Oxford). I subsequently became part of the NetSciEd team. As part of it, I co-organize networks education sessions at the NetSci conference every year. In 2015, we published a booklet of core network concepts (which has been translated from English into 19 other languages thus far). It is available at http://tinyurl.com/networkliteracy. More recently, we edited a book, *Network Science in Education — Tools and Techniques for Transforming Teaching and Learning*, which was published by Springer International Publishing in 2019.

My various outreach efforts are ongoing. In April 2017, using various outreach materials — from both us and others (such as AMS Mathematical Moments) — former UCLA postdoc Puck Rombach and I hosted a mathematics booth at the Los Angeles March for Science. Since 2019, I have published several papers in the journal *Frontiers for Young Minds*, an outlet in which both the reviewers and intended audience are young readers (about 9–15, so there are articles for different age groups), who we hope to engage further in science. There are almost no mathematics papers in this journal, and they have specifically asked for more people to submit mathematics papers to them. I have attempted to do this and plan to write more *FRYM* articles, which I do jointly with my mentees and other collaborators, in the future.

I'd like to close this document with some context from my personal background and prior experiences, as they have helped shape why I care so much about mentoring. I am a second-generation immigrant: My father was born in Argentina and moved to the US when he was a teenager. His family changed their surname upon moving to the US, and my generation is the first one that was born with the surname "Porter". (My father's parents had previously tried to immigrate to the US, but they were unable to do so, apparently because a quota for Jewish immigrants had already been reached. Argentina was much more welcoming than the US to Jewish immigrants.) My parents were the first generation to go to college, and my mother was raised by a single parent, after her father (who I never met) left when she was about 6 years old. My childhood was extremely traumatic — both at school and at home, where I grew up in a violent household and did not have an emotional support network. From a very young age, I became fiercely independent and developed an unusually strong will; that has carried me through everything that I have done ever since. ("What doesn't kill you makes you stronger.", so to speak.) Thankfully, I have received significant help from various more senior academics (though, notably, my PhD advisor was not supportive at all, and we were no longer on speaking terms within about a year after I graduated) during my career. This is part of what I try to pass along to my own mentees. While my various personal experiences as a child and in graduate school may seem only tangentially related to my contributions to equity, inclusion, and diversity, they provide the underpinnings of how I want to help my mentees. I want to help provide a support network — through both their connections to me and their connections to each other — that I had neither as a human growing up in my family nor from my PhD advisor.

In many ways, my students and postdocs *are* my family. I care about them a great deal, and I want to put them in the best possible position to succeed. I want them to have the opportunities that I have had, and that includes trying to do my best to help them through challenges that I was lucky either to not have to face or to have others help me overcome. Much like the philosophy behind the name Association *for* Women in Mathematics (which explicitly uses the word "for", rather than "of"), the key focus is those for whom we are trying to create a good environment. Mentorship of students and postdocs is my main role — much more than research itself or any course that I teach — as a UCLA faculty member. It is important for me for my mentees (and everyone else) to have the best environment possible to succeed, and I do the best I can to play my part in trying to help create one.