

A WORD FROM...



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Mapping Our Future: Opportunities to Collaborate

Advancing research. Creating connections. Promoting the practice and profession of statistics and mathematics. These are the promises the American Statistical Association (ASA) and the American Mathematical Society (AMS) make to its members and the broader community. While we have faced challenges from the COVID-19 pandemic, financial crises at universities and colleges, systemic racism, and cultural conflicts, the ASA remains committed to keeping these promises. This is why it is more important than ever to reach out to our professional colleagues and sister societies to achieve our common goals. We appreciate the opportunity to share some thoughts with you and to explore ways that the American Statistical Association and the American Mathematical Society communities can work together to meet our collective missions to foster inclusiveness in STEM fields.

As members of both the Joint Policy Board for Mathematics (JPBM) and the Conference Board of the Mathematical Sciences (CBMS), we have a long history of collaborating to support and advance statistics and the mathematical sciences. We take time each April to recognize the many contributions of our disciplines by celebrating Mathematics and Statistics Awareness Month. Beginning in 2022, the ASA joins the AMS as a partner in organizing the Joint Mathematics Meetings, and we are looking forward to showcasing how statistics, data science, and mathematics can work together to help create and sustain a world committed to antiracism and social justice. It's important to include data science, which according to a 2018 report from the National Academies of Sciences, Engineering, and Medicine is "a broader array of activities that involve applying principles for data collection, storage, integration, analysis, inference, communication, and ethics." The discipline is evolving but it is clearly interdisciplinary and fits into the umbrella under which our communities may collaborate.

Unfortunately, the impact of racism continues to threaten the safety and quality of life for people of color in our country. We have much work to do to address Justice, Equity, Diversity, and Inclusion (JEDI). As a first step, both of our societies issued statements affirming our commitment to JEDI principles and condemning racist practices (<https://www.ams.org/about-us/governance/policy-statements/sec-ams-policystatements>, <https://www.amstat.org/asa/files/pdfs/JEDI-Statement.pdf?v=1.0>). These statements speak not to our unique expertise in statistics and mathematics, but rather to

our responsibility as part of the STEM community.

In late 2020, the ASA established an Anti-Racism Task Force, which has three main goals:

- Develop recommendations for ASA infrastructure and policy that will help drive positive cultural change within the ASA and remove structural barriers to justice, equity, diversity, and inclusion.
- Develop recommendations that ensure the communications and activities of the ASA align with its position on justice, equity, diversity, and inclusion.
- Propose mechanisms for informing the public about how statistics and data science can contribute to identifying racial and ethnic bias in society and how we might address these issues.

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Photo courtesy of Wendy L. Martinez.



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The task force has been exploring each of these areas and will provide the ASA Board of Directors with a roadmap and recommendations on ways to achieve the JEDI principles outlined in our ASA statement.

We do not yet have any specific initiatives arising from the task force, but there are some opportunities for us to collaborate with the AMS. The ASA has a new outreach group called JEDI (www.datascijedi.org/) that could work with the AMS Committee on Equity, Diversity, and Inclusion (COEDI) (www.ams.org/about-us/governance/committees/coedi-home) on common goals. What we find particularly exciting about COEDI is its charge to “provide advice about self-assessment tools” and “to identify and develop programs to build diversity within the profession.” The ASA has several outreach efforts supporting historically underrepresented groups such as people of color and the LGBTQ+ communities, and it would be wonderful to collaborate with the AMS on similar initiatives. For over twenty years, the ASA has hosted a StatFest, which “is traditionally a one-day event aimed at encouraging undergraduate students from historically under-represented groups to consider graduate studies and careers in statistics and data science” (<https://magazine.amstat.org/blog/2020/12/01/virtual-statfest/>). The ASA recently started a Pride Scholarship “to raise awareness for and support the success of LGBTQ+ statisticians and data scientists and allies” (<https://www.amstat.org/ASA/Your-Career/Awards/ASA-Pride-Scholarship.aspx>).

The ASA shares the AMS’s commitment to education and has made education at all levels a strategic priority. Recently the ASA Board of Directors joined with the National Council of Teachers of Mathematics (NCTM) to endorse the Pre-K–12 Guidelines for Assessment and Instruction in Statistics Education II: A Framework for Statistics and Data Science Education report (GAISE II). The framework presented in GAISE II recognizes the developmental process necessary to acquire statistical skills and knowledge. A single high school statistics course is not sufficient to prepare students for 21st century work and life. Statistics and data science education must begin in early childhood and continue throughout middle and high school. GAISE II highlights the need for Pre-K–12 Guidelines for the consideration of different data and variable types, the inclusion of multivariate thinking throughout all Pre-K–12 educational levels, the role of probabilistic thinking in quantifying randomness throughout all levels, the importance of incorporating technology as feasible, and the importance of clearly and accurately communicating statistical information. Ensuring that the mathematics and statistics standards that guide Pre-K–12 education prepare all students for productive work and life is another important area for collaboration. This commitment to Pre-K–12 education requires an equally substantial commitment to teacher education and professional development.

The ASA was admitted to the Computer Sciences Accreditation Board (CSAB) in 2021, along with the Association of Computing Machinery and the IEEE Computer Society. The CSAB is charged with accrediting data science programs under approved program criteria (https://abet.co1.qualtrics.com/jfe/form/SV_02pWHMsKN46j9b). The primary goal of accreditation is to create pathways for program graduates to acquire the necessary knowledge, skills, and abilities to be successful. In a 2015 statement, the ASA recognized that the interdisciplinary nature of data science “required a substantial collaborative effort” for it to realize its full potential. Although the discipline of data science continues to evolve, there is no uncertainty that the need for a solid foundation in statistics and mathematics is essential for data scientists. Working together, our communities can ensure data science programs meet their potential by including coursework in statistics, mathematics, and computer science.

There is a sentence on the AMS Education webpage that begins, “Please visit regularly, watch us grow.” As we map our future, we hope that we can “grow” together. We have common goals to foster early education in STEM, to ensure our professions embrace JEDI principles, and to promote rigor in data science. This essay serves as a call to action—reach out to us with your ideas and commitment to work together and forge a brighter future.